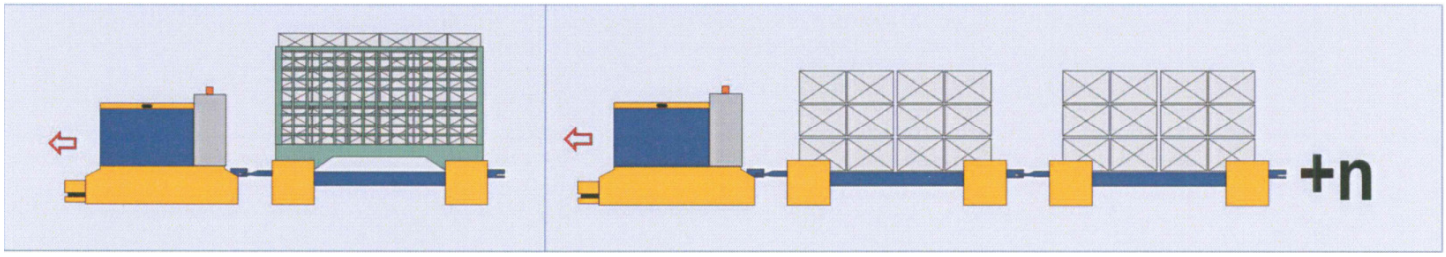
1. Draw Cart



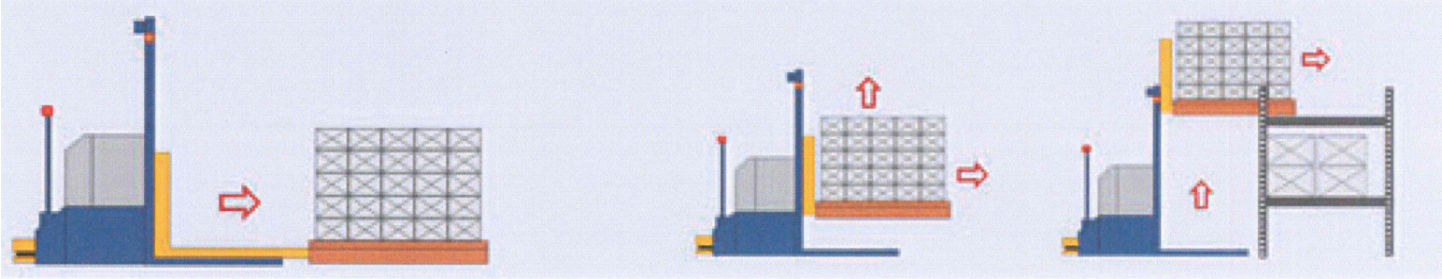
Our Draw Cart **ZC** is an evolution towards specialized order picker. Our ZC Draw Cart with CCD camera optical guidance is a further development right up to a specialized drawing vehicle (tow car). Various trailers can be manually attached to the ZC using suitable couplings. We optionally supply an electronically actuated model that provides automatic disconnection. The ZC can be used in all types of production facility and optimally fulfils the order picking tasks of the vehicle. Investments will pay off after 1 year maximum and the operational costs for goods and material flow will have been reduced several times over.

The draw cart has very productive features. These features range from use as an order-picker vehicle, or for area-linkage, or even machine linkage. The optional expansions to the basic vehicle model, such as: location detection, diagnostics and maintenance module, radio communication, automatic loading and unloading function, various systems of energy supply and the adjusted control systems pay tribute to the flexibility of the ATV. The following equipment can be retrofitted as required: Pallets (workpiece carriers), cartridges, lifting tables, storage boxes, robots, etc.

Technical Data	
Towing capacity	up to 2.000 kg
Vehicle speed	Freely programmable (max. 1 m/sec.)
Dimensions (LxWxH)	1.100 x 630 x 980 mm
Voltage	24VDC
Driving Power	approx. 1.200 W
Battery system	100 – 450 Ah
Rear wheel drive	with differential, drive wheels of vulkolan ø 250 mm
Kingpin steering	steering motor 220 W, steering wheels of polyamide ø250 mm
trailer coupling	ball coupling, automatic, manual
Track guidance	inductive, optical
Positioning	landmarks, transponder
Safety equipment	laser scanner (personal protection, obstacle detection)
Vehicle control system	SPS Siemens
Visualization	touch panel Siemens

dpm Daum + Partner Maschinenbau GmbH Engineering Am Lauerbühl 2, D-88317 Aichstetten, Tel.: +49-7565-9408-0,
Fax +49-7565-9408-50 email: info@daumundpartner.de, internet : www.daumundpartner.de

2. Fork-lift cart

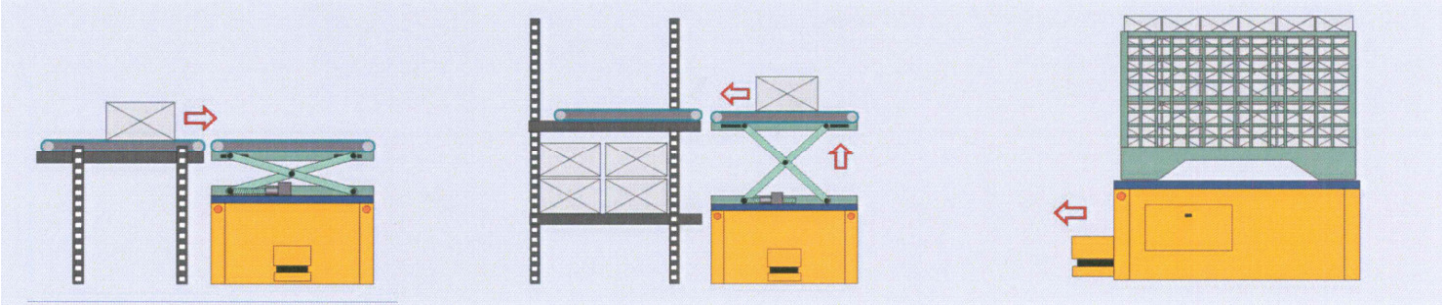


The **GC** is the best replacement for a lift truck or a forklift. It accepts pallets, Euro crates and other containers and transports them without requiring machine operators. Due to the optimal arrangement of the carrier rollers and a very low centre of gravity, its stable construction provides exemplary stability and safe cornering. The dead weight of the GC is nevertheless only 600 kg. The idea of „less is more“ has been consistently applied to the GC: the lighter the vehicle, the more effective is the use of the battery and the higher the driving time. The built-in PLS laser scanner provides both personal protection and obstacle detection. Due to its spring bearing, the drive is only strained minimally, even at full bearing load, therefore guaranteeing a long lifetime.

The fork-lift cart has very productive features. These features range from use as an order-picker vehicle, or for area-linkage, or even machine linkage.
The optional expansions to the basic vehicle model, such as: location detection, diagnostics and maintenance module, radio communication, automatic loading and unloading function, various systems of energy supply and the adjusted control system pay tribute to the flexibility of the ATV.
The following equipment can be retrofitted as required: Pallets (workpiece carriers), cartridges, lifting tables, storage boxes, robots, etc.

Technical data	
max. bear. cap.(lift. load)	2.400 kg
max. lifting height	Model based, approx. 2.000mm
Fork height	85 mm
Fork width	180 mm
Max. driving speed	Freely programmable (max. 1 m/sec.)
Dimensions (LxWxH)	2.128 x 960 x 1.700 mm (Length an height based on fork height and width)
Voltage	24VDC
Driving power	2.400 W
Battery system	24VDC, max. 620 Ah
Single wheel drive	160W steering motor, steering wheels of polyamide ø150mm
Hydraulic-unit	24 VDC, approx. 2.000 W
Track guidance	inductive, optical, free navigation with mirrors (ceiling navigation)
Positioning	landmarks, transponder
Safety equipment	Laser scanner (personal protection, obstacle detection)
Vehicle control system	SPS Siemens
Visualization	touch panel Siemens

3. Assembly cart



Due to the low, flat platform of the Assembly Cart **MC**, which is accessible from all sides, it is very suitable for flexible execution of a wide range of tasks. It has a special layout allowing it to accommodate individual devices and equipment. The **MC** model range configurations are adjusted to special requirements on request of the customer. However, our standard MC has already been designed (dimensions, modular attachments, battery capacity) to allow it to be used almost everywhere in even the narrowest of spaces without special adjustments. From simple order-picking vehicle right up to complex assembly vehicle, the MC meets all your internal transport requirements.

The transport cart has very productive features. These features range from use as an order-picker vehicle, or for area-linkage, or even machine linkage.
The optional expansions to the basic vehicle model, such as: location detection, diagnostics and maintenance module, radio communication, automatic loading and unloading function, various systems of energy supply and the adjusted control systems pay tribute to the flexibility of the ATV.
The following equipment can be retrofitted as required: Pallets (workpiece carriers), cartridges, lifting tables, storage boxes, robots, etc.

Technical data	
max. bearing cap.	800 kg
Max. towing cap.	1.000 kg
Driving speed	Freely programmable (max. 1 m/sec.)
Dimensions (LxWxH)	1.200 x 700 x 300 mm
Voltage	24VDC
Propulsion Difference steering	2 servo motors
Energy supply	Battery, contactless energy supply
Communication	W-LAN
Track guidance	inductive, optical
Positioning Safety equipment	landmarks, transponder
Personal protection	- bumper + ultrasonic - laser scanner (personal protection, obstacle detection)
Load. assumption places	
Vehicle control system	SPS Siemens
Visualization	touch panel Siemens
Optional	
Second steering axle (dragged)	
Laser scanner for rear driving	
Automated battery change	
Sidewise foot button	

dpm Daum + Partner Maschinenbau GmbH Engineering Am Lauerbühl 2, D-88317 Aichstetten, Tel.: +49-7565-9408-0,
Fax +49-7565-9408-50 email: info@daumundpartner.de, internet : www.daumundpartner.de

4. Special-AGV

Towing, Fork-Lift or Assembly carts, modified after particular customer wishes, employing of established components.

technical data realized AGV	
max. bearing load	12.000 kg
Driving speed	Freely programmable (max. 1 m/sec.)
Dimensions (LxW)	6.000 x 3.000 mm
Power feed	9 kW
Track guidance	inductive, optical, free navigation with mirrors (ceiling navigation)
Positioning	Landmarks, transponder
Safety equipment	Laser scanner (personal protection, obstacle detection)
Vehicle control system	SPS Siemens
Visualization	Touch panel Siemens
Superstructure	
Lifting tabel	
Cross / along conveyor	
Workpiece carrier	
Special solutions	

dpm Daum + Partner Maschinenbau GmbH Engineering Am Lauerbühl 2, D-88317 Aichstetten, Tel.: +49-7565-9408-0,
Fax +49-7565-9408-50 email: info@daumundpartner.de, internet : www.daumundpartner.de