



Mobile  
flash-butt welding



Mobile  
welding works



Aluminothermic  
fusion welding

# Mobile Welding

Technical Datasheet



## Mobile welding: seamless and extremely economical

Flash-butt welding is the premium quality technology for manufacturing long-welded rails. Mounted on road-rail vehicles, the welding modules deliver maximum quality, economy and versatility when laying continuous welded rail. A "fixed" and a movable rail are aligned inside the welding head and then clamped. Hydraulic pressure is used to repeatedly butt the end of the movable rail against the end of the fixed rail. The ends of the rails are heated and at the end of the process pressed together and held in position. The whole process is controlled automatically by a welding processor.



### Benefits

- / Welds short rails together at or close to the construction site
- / Generates long rails of up 300 meters in length
- / Highest quality and stability
- / Process is stable thanks to processor control
- / No artificial material incorporated into the rail
- / High output in a short time (up to 8 welds per hour)

### Applications

- / Mainline, light-rail depots
- / For all common rail profiles
- / Cannot be used on switches or as a closure weld
- / Not suitable for grooved rails



## Mobile Welding Technical Data

Designation	MW03	MW04	MW05
Vehicle type	Mercedes Benz	Mercedes Benz	Mercedes Benz
Basis vehicle type	ACTROS 3346	ACTROS 3346	ACTROS 3346
Make	road-rail	road-rail	road-rail
Model	ZW442	ZW442	ZW442
Device number of welding head	2997	30184	30210
Device number of rail running gear / crane	2371 / 2374	2623	2655
Vehicle number	9980 9906 046-4	9980 9906 015-9	9980 9906 016-7
Machine number	AS1.210.2624.02997	AS1.210.2624.30184	AS1.210.2624.30210
Year of manufacture	2007	2013	2013
Welding processor	SWEP 06	SWEP 06	SWEP 06
Welding head	AMS 60.1.0/210 Supraflex	AMS 60.1.0/210 Supraflex	AMS 60.1.0/210 Supraflex

### Main dimensions

Wheel base	5,650 mm	5,650 mm	5,650 mm
Tyres on front axle	385/65R 22.5	385/65R 22.4	385/65R 22.5
Tyres on back axle	315/80 R 22.5	315/80 R 22.4	315/80 R 22.5
Maximum speed on road	80 km/h	80 km/h	80 km/h
Maximum speed on rails	25 km/h (19.9 km without AWS)	25 km/h (19.9 km without AWS)	25 km/h (19.9 km without AWS)

### Weight

Gross vehicle weight	34,000 kg (exemption: article 70 of Road Traffic Act)	35,000 kg (exemption: article 70 of Road Traffic Act)	35,000 kg (exemption: article 70 of Road Traffic Act)
Tare weight including rail conveyor	33,700 kg	28,799 kg	28,799 kg
Permissible trailing load	12,500 kg	none	none
Length	12,000 mm	11,950 mm	11,950 mm
Width	2,530 mm	2,500 mm	2,500 mm
Height above street	3,500 mm	3,630 mm	3,630 mm
Height above TOR	3,730 mm	3,785 mm	3,785 mm
Rail running gear – front	hydraulically actuated toggle-lever system of the rail running gear behind the front axles with 2 oil-cooled disc brakes per axle as service brakes and immobilization brake	hydraulically actuated toggle-lever system with bogie located behind the front axle. Two carrying axles with multi-disc brakes	hydraulically actuated toggle-lever system with bogie located behind the front axle. Two carrying axles with multi-disc brakes
Rail running gear – rear	hydraulically actuated toggle-lever system of the rail running gear behind the rear axles with hydrostatic drive, 2 oil-cooled multi-disc brakes per axle as service brakes and immobilization brake	hydraulically actuated toggle-lever system with bogie located behind the rear axle. Two hydrostatic drive axles with disc brakes	hydraulically actuated toggle-lever system with bogie located behind the rear axle. Two hydrostatic drive axles with disc brakes
Diameter of rail wheels	560 mm	570 mm	570 mm
Track gauge	1,435 mm	1,435 mm	1,435 mm
Distance between inside surface of wheels	1,360 mm	1,360 mm	1,360 mm
Distance between rail wheel axles	6,850 mm	6,850 mm	6,850 mm
Rail wheel profile	DB profile	DB profile	DB profile

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### Superstructural components

Superstructure 1	ZW 442.2374 road-rail Supralift	ZW 442.2374 road-rail Supralift	ZW 442.2655 road-rail Supralift
Superstructure 2	AMS 60 welding machine	AMS 60 welding machine	AMS 60 welding machine

### On-track operability

Shunting maneuvers not permitted (e.g. hump-shutting and loose shunting)	hump-shunting and loose shunting not permitted. Ferry transport permitted	hump-shunting and loose shunting not permitted. Ferry transport permitted	hump-shunting and loose shunting not permitted. Ferry transport permitted
Smallest traversable curve radius	150 m / 350 m	150 m / 350 m	150 m / 350 m
Max. uphill and downhill gradients; cant (transport mode / operating mode)	40 ‰	40 ‰	40 ‰
Transport possible inside train set or as end vehicle	Insertion in train set not permitted		

### Weather constraints

Max./min. temperature for operation / ambient temperature (operating mode) as per IEC 204-1 and EN 60204	between -5° and 45° C, outside temperature	between -5° and 45° C, outside temperature	between -5° and 45° C, outside temperature
Humidity	at 20 °C : max. 90% at 40 °C: max 50%	at 20 °C : max. 90% at 40 °C: max 50%	at 20 °C : max. 90% at 40 °C: max 50%
Operating elevation (meters above sea level)	max. 3,000 meters	max. 3,000 meters	max. 3.000 m

### On-railing

On-railing point 8–10 meters wide depending on location / transition from road to rail on as level a plane as possible

### Equipment (basic equipment for each machine and features)

Maximum rail length	Up to 120 m: without restrictions / when using "soft" road-rail: lay rails on roller. Rails 180 m and up: lay rails on roller. Rails 180-300 meters: lay rails on large rollers		
Minimum rail length	1.5 meters	1.5 meters	1.5 meters
Welding the rails (middle of track, sleeper heads etc.)	middle of track, sleeper heads, outside track area (welding at the depot)	middle of track, sleeper heads, outside track area (welding at the depot)	middle of track, sleeper heads, outside track area (welding at the depot)
Performance data	4–6 flash-butt welds per hour	4–6 flash-butt welds per hour	4–6 flash-butt welds per hour
Rail profiles permitted	Vignoles rails 36–68 kg/m (S41-R65), 115RE R350 HT	Vignoles rails 36–68 kg/m (S41-R65)	Vignoles rails 36–68 kg/m (S41-R65), 60 E1 400 UHC
Applicable standards	EC declaration of conformity for machinery: EC directive 98/37/EG (Ex 89/392/EEC) "Low-voltage equipment" 73/23/EEC "EMC" 89/336 EEC Standards: EN 292-1 +2; EN 60204-1; EN-14587-2:2009; ISO 669-1	EC directive 2006/42 EC annex 1 EMC directive (2004/108/EG) Standards: EN ISO 12100:2010 EN 15746-1:2010; EN 15085 1-5, EN 15746-2:2010, EN 14586-2:2009	EC directive 2006/42 EC annex 1 EMC directive (2004/108/EG) Standards: EN ISO 12100:2010 EN 15746-1:2010; EN 15085 1-5, EN 15746-2:2010, EN 14586-2:2009
Weld analyzer	The industry computer's weld process monitoring and documentation system registers, monitors and analyzes the three parameters: current–power–distance		
Personnel/machine operators / crew (number & qualification)	2 machine operators	2 machine operators	2 machine operators
Refueling	900 liters of diesel (approx. 39 liters per hour of operation)	900 liters of diesel (approx. 39 liters per hour of operation)	900 liters of diesel (approx. 39 liters per hour of operation)

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