

Welding guns with integrated position measuring system

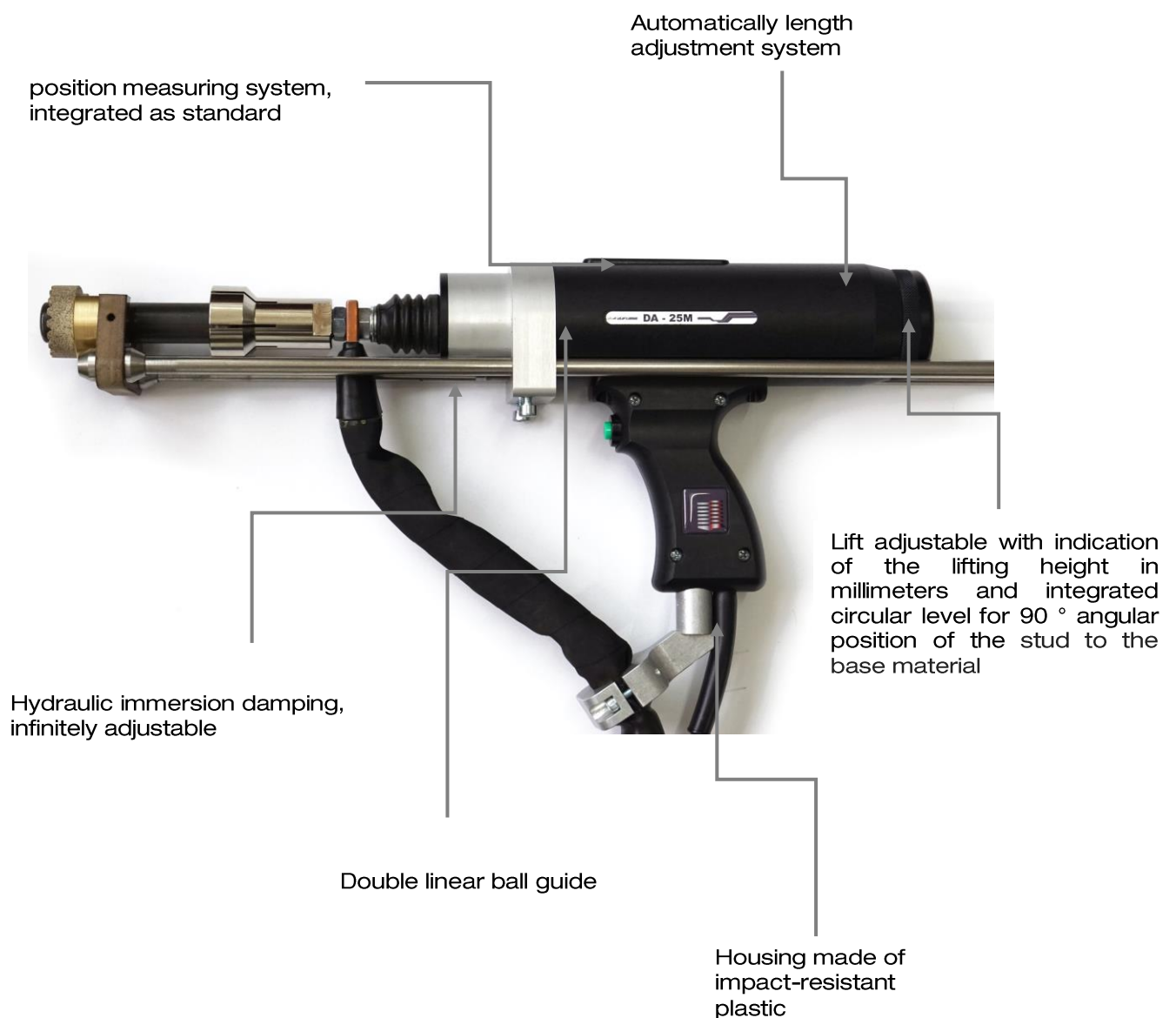
GAP-M*¹, GAP-10M, GAP-12M, DA-10M, DA-12M, DA-19M, DA-22M, DA-25M, ATP-8M*¹

Integrated position measuring system

The M-Series stud welding guns, which even recognize when wearing and / or dirtiness has a negative influence on the welding quality!

Position measuring system integrated in **our largest welding guns**

Example DA-25M



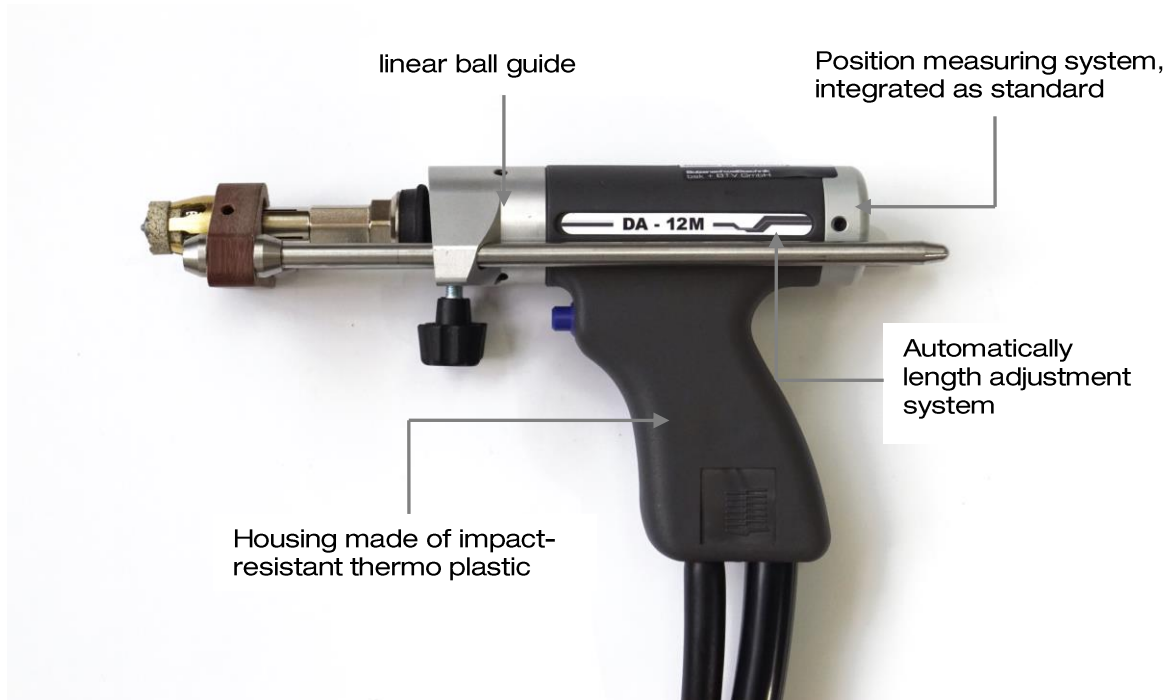
* 1 Note: GAP-M and ATP-8M can also be used for tip-ignition (process capacitor discharge stud-welding, gap-process)

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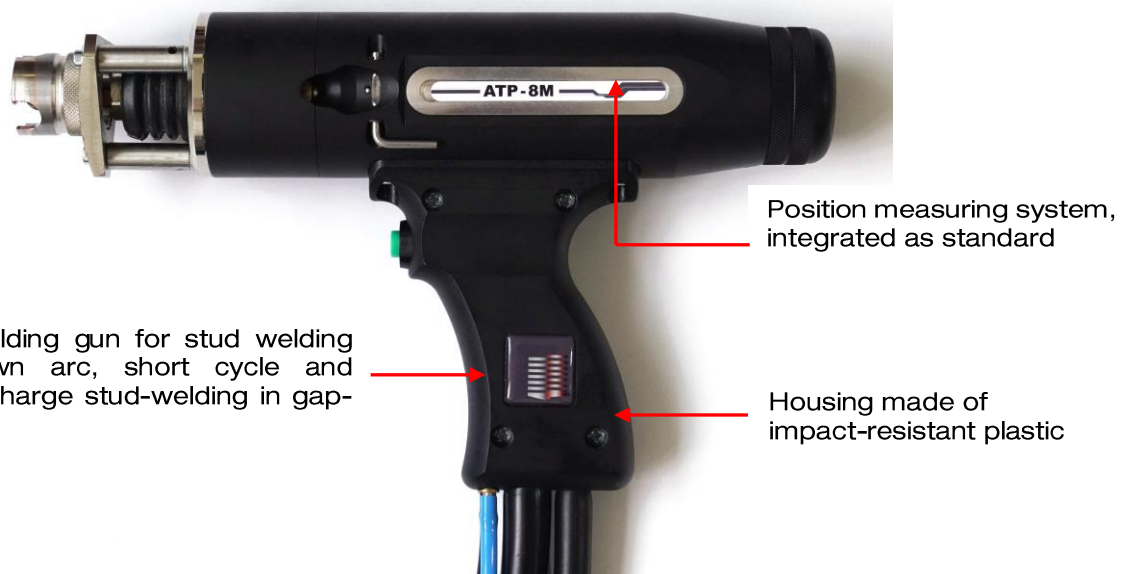
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Position measuring system, also integrated in our smallest and compact welding guns of GAP-series, DA-10M and DA-12M

Example DA-12M



Example automatic gun ATP-8M



ATP-8M

Automatic welding gun for stud welding process drawn arc, short cycle and capacitor discharge stud-welding in gap-process

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Features

Welding guns with integrated position measuring system allow the monitoring of welding quality by measuring and displaying of stud-overlap, lift-dimension, depth of immersion and piston speed in combination with drawn-arc stud-welding machines (DAI series, DA-800M) or CDP-M capacitor discharge stud welders.

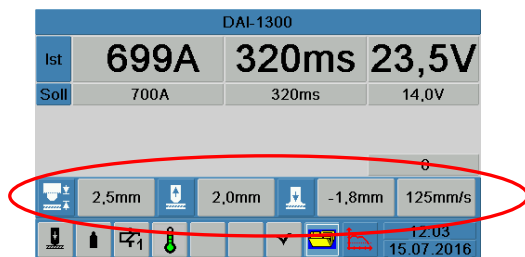


Figure 1 above: Example of a connected gun **DA-12M drawn-arc with way measurement system** as it can be viewed on the bottom of the display.

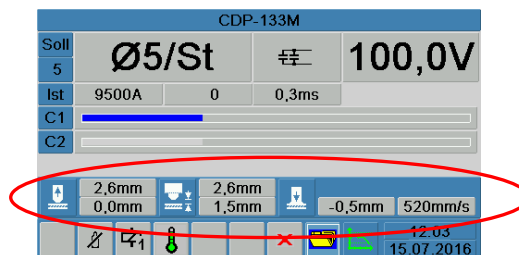


Figure 2 above: Example of a connected **GAP-M-gun tip-ignition, with way measurement system** as it can be viewed on the bottom of the display.

Advantages

- The position measuring system can be used with or without activated digital process control system on the inverter, in order to displays the mechanical parameters of the **stud overlap, the lift adjustment, the meltdown (immersion) and the piston speed**;
- By indicating **the lifting adjustment** and the **stud overlap**, the welding gun can be used safely and **comfortably adjusted** to the respective welding element **before the welding process started**; The operator can see both values directly in the display of the power units;
- The lift as a decisive parameter is an essential factor for process-stability, reproducible and with high quality;
- The operator saves the time-consuming and expensive setting and measuring, as is the case with welding guns without position measuring system
- **Optional digital process controlling system:**
 - In conjunction with the digital process control, constant comparison of actual and preset setpoints with warning or blocking of the power unit;
 - In the ring buffer, the welds can be directly called as setpoint / actual comparison, deviations from the intervention limits are displayed in red;
 - Readout of all welding parameter sets via Laptop from USB port at the back of the power units.

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Technical specifications

Type of welding gun	GAP-M	GAP-10M	DA-10M	GAP-12M	DA-12M	DA-19M	DA-22M DA-25M	ATP-8M
Stud welding process	Capacitor discharge welding (gap process)	Short cycle (with or without shielding gas)		Drawn arc stud welding with ceramic ferrules or shielding gas			Drawn arc with ceramic ferrules	Drawn arc, short cycle, tip ignition (gap process)
Welding area	M3 – M10	M3 – M10(Ø10mm* ²)	M3 – M10(Ø10mm* ²)	M3 – M12(Ø12mm* ²)	M3 – M12(Ø12mm* ²)	M8 – M20(Ø16mm* ²)	DA-22M: M8- M24(Ø22mm* ²) DA-25M: M8- M30(Ø25mm* ²)	M3(Ø3mm) – M8(Ø8mm* ²)
Guide	Linear ball guide					Double linear ball guide		Sleeve bearing guide
Way measurement system	For measuring stud overlap, lift, depth of immersion and piston velocity							
Lift adjustment	1,0...4,0mm, continuously adjustable via scale to welding gun		Konstant	1,0...4,0mm, continuously adjustable via scale to welding gun	Konstant	2,0mm...6mm, in increments of 0,5mm (lift either via scale on welding gun and with connected position encoder additionally digitally readable at the inverter)		1,0mm...6,0mm (continuously adjustable)
Vertical alignment	Manual (without circular lever)					Circular lever (integrated in the end cap)		Manual (without circular lever)
Length compensation	./.	Ball-carrier system						./.
Immersion damping	./.					continuously adjustable (hydraulic damper)		./.
Welding cable	3m, 25mm ²		5m, 35mm ²			5m, 50mm ²	DA-22M: 5m, 95mm ² (* ³) DA-25M: 5m, 120mm ² (* ³)	3m, 25mm ²
Weight (without cable)	0,85kg					2,10kg	2,70kg	1,5kg

***2: Maximum welding-diameter (according standard DIN EN 13918); Material, group of material and class of mechanical strength of usable welding elements and allowed welding-joints of studs und ground material see DVS-roule 0902 "Drawn arc stud welding", DVS roule 0903 "capacitor discharge stud welding" and DVS-roule 0967 „Calculation of welding joints“**

***3: Welding cable external**