



## Spatter Matters

Weld spatter occurs during spot welding when small liquid particles are expelled from the surface of the materials being welded together, due to all the pressure and heat. The flying molten metal (spatter) can cause a wide variety of problems that add unnecessary costs and risks.

### Spatter welding:

- High cost to repair or replace Personal Protective Equipment (PPE)
- Higher electrical power usage and related costs
- Uneven, jagged or dimpled spots caused by spatter
- Higher maintenance costs for cleaning and equipment
- Costs to repair or replace welding equipment
- Health and safety implications for employees
- Increased production down-time

### Spatter-free welding:

- Cost savings on PPE
- Reduced power consumption and related costs
- Better weld quality and less rework
- Reduced maintenance costs
- Lower consumable equipment costs
- Safer and cleaner environment
- Increased production up-time
- Reduced component testing and related costs



### About Luvata

Luvata is a world leader in metal solutions manufacturing and related engineering services to industries such as renewable energy, automotive, healthcare, and power generation and distribution. The company's continued success is attributed to its longevity, technological excellence and strategy of building partnerships beyond metals. Employing approximately 1,400 staff in 6 countries, Luvata works in partnership with customers such as ABB, CERN, Siemens and Toyota. Luvata is a group company of Mitsubishi Materials Corporation.

## Nissan's journey towards spatter-free welding

Nissan's Sunderland Plant (NMUK) has been the UK's largest car producer for 15 years running as well as biggest exporter for 13 consecutive years.

Representing over £3.5 billion of investment the plant directly employs around 6,000 staff and produces 2,000 cars every day.

Record levels of productivity have enabled Nissan Sunderland to continue to secure contracts for new models, currently producing the Note, Qashqai, Qashqai+2 and Juke plus the recently introduced 100% electric Nissan Leaf.

The plant is currently gearing up to welcome the next generation Qashqai, the new Nissan Note and a yet to be named Infiniti model, Nissan's luxury brand.

Within NMUK, the Body Shop is a highly-automated section of the factory with over 800 robots; pressed-panels are welded together to create the complete body shell of the car, which is then transferred to the Paint Shop.

## Spatter comes with a cost

NMUK has spent significant resources on problems directly caused by spatter. This includes damage to sensors, cables, jigs, clamps and mechanical drives. Spatter has to be manually removed, which also comes with a cost.

"We switched to using Luvata electrodes, but mainly focused on the actual cost benefits, not the long-term costs of the spatter," indicates the Weld Team Supervisor from NMUK. "The welding expert from Luvata was persistent in explaining we needed to consider those costs as well. With Luvata's expertise, we worked together to select the correct material weld cap and fine tuned the welding parameters to enable the reduction of weld spatter."

With numerous materials – different alloys and grades of steel – and an average of 4,000 spot welds per vehicle, not every weld is exactly the same. As the world's leading manufacturer of resistance-welding electrodes, Luvata offers a wide range of electrodes that give customers a choice concerning spatter.

"Based on our production requirements and in working closely with Luvata, we were able to pick the right electrode for us. For NMUK, it resulted in a spatter-reduced weld."



NMUK Standard Parameter



NMUK Spatter Reduction Parameter

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