



**eDART**  
**INTERNAL**  
**DART VALVES**



# eDART INTERNAL DART VALVES OPTIONS

eDART's internal dart valves are body-less valves suitable for installation within a slurry tank, cell, or box. There are two main variations:

- 1 Self-contained triDart valves are factory calibrated and installed as a single unit**
- 2 iDart valves have a bolt-down seat cage with only a shaft extending down to the actuation unit**

Both types offer the stability and reliability advantages of head-guiding, where the plug is guided into the seat with supporting bars set out all around the plug.



*The iDart is suited to deep flotation machines and the self-contained TriDart is suitable for conventional flotation tanks or distribution boxes*

*Internal dart valves are used to control the level in a tank or distribution box when the seat is located inside the vessel*



# DO YOU HAVE ANY THESE ISSUES?

- Non-serviceable or difficult-to-access seats
- Plug mounting bolts eroding and the plug decoupling from the shaft
- Premature wearing of the shaft guiding resulting in poor stability of the plug head
- Bending or breaking of the shafts
- Actuator seals failing
- Axial backlash on the shaft-actuator coupling
- Misalignment of the valve shaft and actuator stem



*The installation of an iDart or TriDart will eliminate all of these issues.*



# eDART | TRIDART

The eDART TriDart is a self-contained internal dart valve that is dropped into the vessel and bolted down. It has the significant advantage of being pre-assembled, pre-compressed and calibrated prior to shipment to the site.

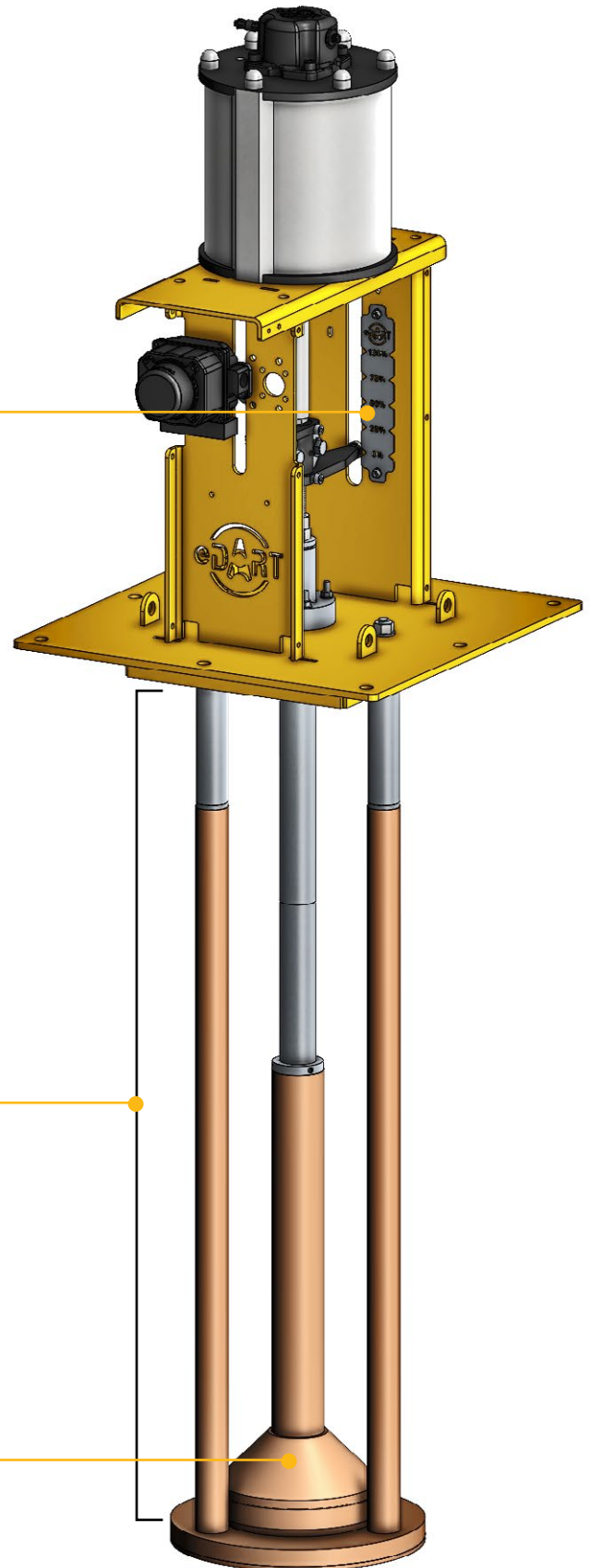
## ENGINEERED FEEDBACK

Our innovative design incorporates an internal electrical transducer within the actuator to replace the mechanical linkages that are often offered as standard. This feature proves advantageous in slurry control applications as it: eliminates the need for long and fragile mechanical linkages that are susceptible to damage and has superior feedback reporting. Additionally, the positioner may now be conveniently located in a more accessible and suitable location, ensuring ease of operation.

## SEAT CAGE

The TriDart's long guide bars guide the plug head at the bottom and fix the seat relative to the bonnet. The seat cage is not bolted to the bottom of the tank

## PLUG

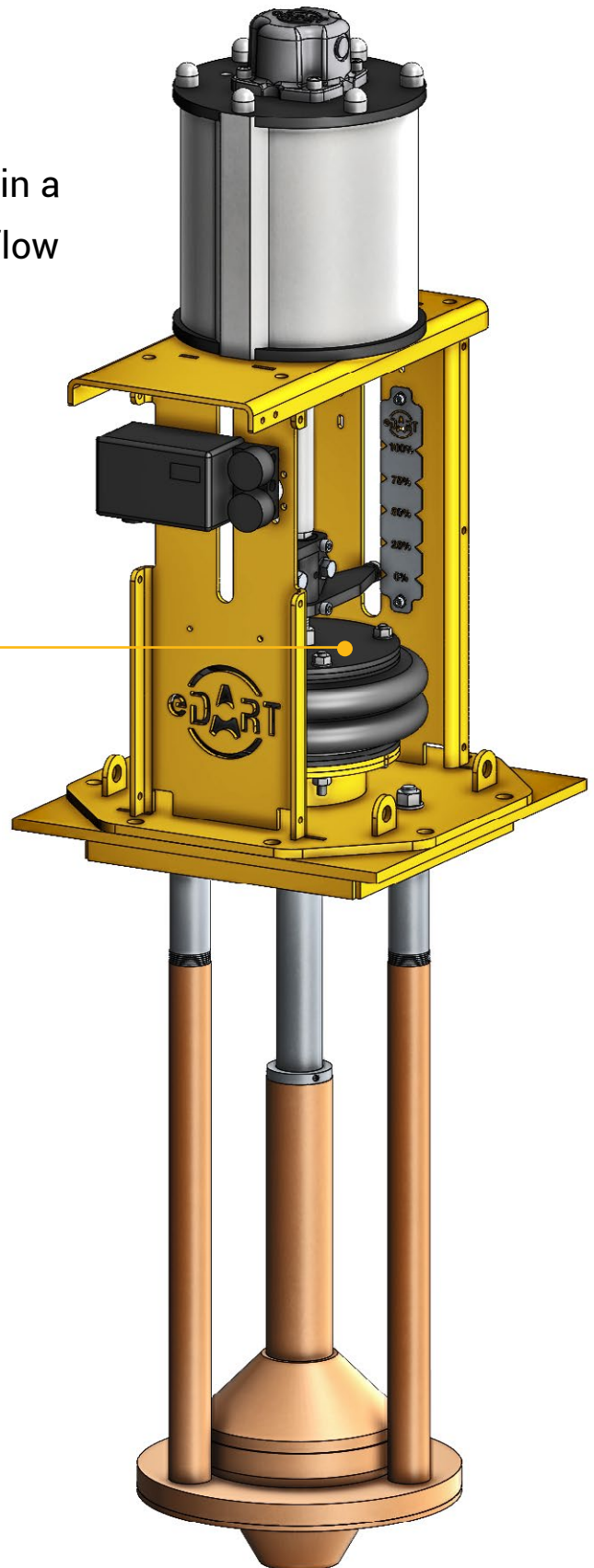




## eDART | SEALED TRIDART

The eDART Sealed Tridart is the same as the Tridart but with the addition of bellows so that the valve can be used in a pressurised vessel such as the underflow of a cyclone.

**BELLOWS**  
Designed to perform in  
a pressurised vessel

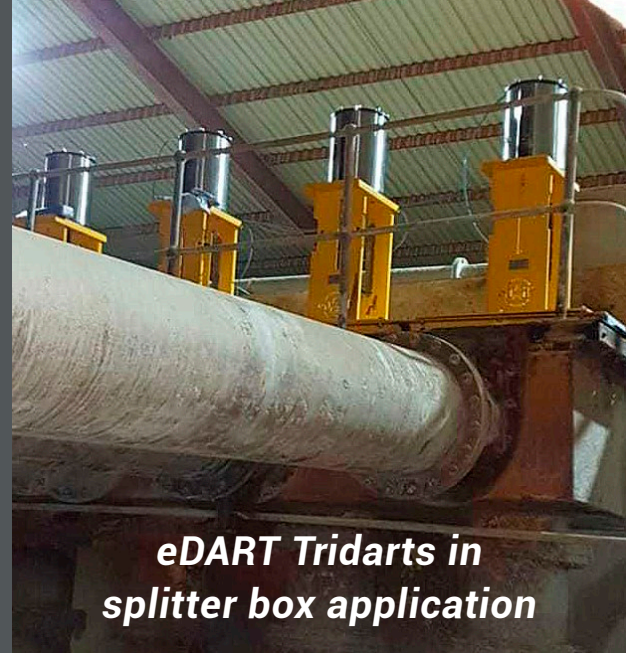


*The TriDart is recommended for a tank depth of up to 2–3 metres.*





**Extra long eDART Tridart**



**eDART Tridarts in splitter box application**



**eDART Sealed Tridarts**

Engineered from high-quality PTFE material, the plug guides shown above are designed as a standard feature for large valves. They ensure superior guidance while effectively eliminating any rotational risks. Rely on our solution to maintain a secure and dependable operation even in the most challenging turbulent flow conditions.





# eDART | IDART

The eDART Idart is the simplest internal dart valve in our range but requires the most time for installation and calibration. The actuator mounting plate is bolted to the vessel framework and the seat cage to the bottom of the vessel; then the positioner needs to be calibrated and the plug head compression fitted to the seat. The valve does not require additional internal guide plates as the guiding is done on the plug head.

## FLEXIBLE COUPLING

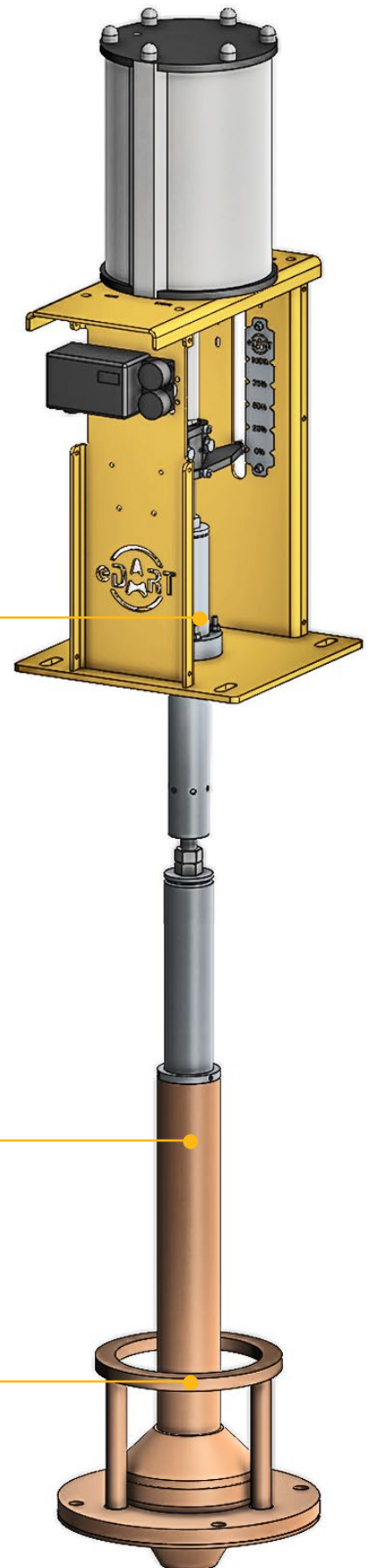
Angular misalignment between the valve shaft and actuator stem is removed by this special universal joint to protect the actuator

## SHAFT GUARD

As a result of the plug head being guided, the shaft is freed up to be protected by a polyurethane guard.

## SEAT

The iDART bolt-down seat is fitted to a stand-off stub piece which has two advantages: protection from sanding and ease of replacement







*Installed eDART Idarts in service*







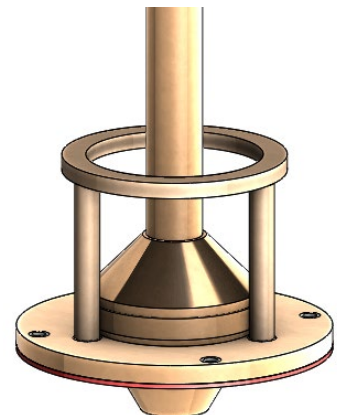
*eDART Tridarts on the production floor*

## LARGE ACTUATORS

Through extensive experience, eDART has discovered the importance of applying a significant safety factor when determining the required force for valve opening or closure. While a smaller actuator may be suitable for on-off applications or mild process conditions, it becomes crucial to consider the influence of turbulent forces on the plug when aiming to regulate flow. In such cases, where substantial turbulent forces are present and flow modulation is required, it is imperative to be aware of the potential challenges involved.

## PLUG

The conical plug has a linear flow characteristic while the concave plug shape is quick opening: the linear flow characteristic is better for the control system.





## TALK TO US ABOUT SOLVING YOUR SLURRY-RELATED CHALLENGES

**eDART** designs and manufactures slurry equipment to improve recovery rates for metallurgical plants. We combine our Computational Fluid Dynamics (CFD) expertise with extensive site experience to reliably solve your complex slurry challenges.

***How can we help you?***

**eDART GROUP SA (PTY) LTD**

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***ISO 9001 is the internationally recognised standard  
for the quality management of businesses.***