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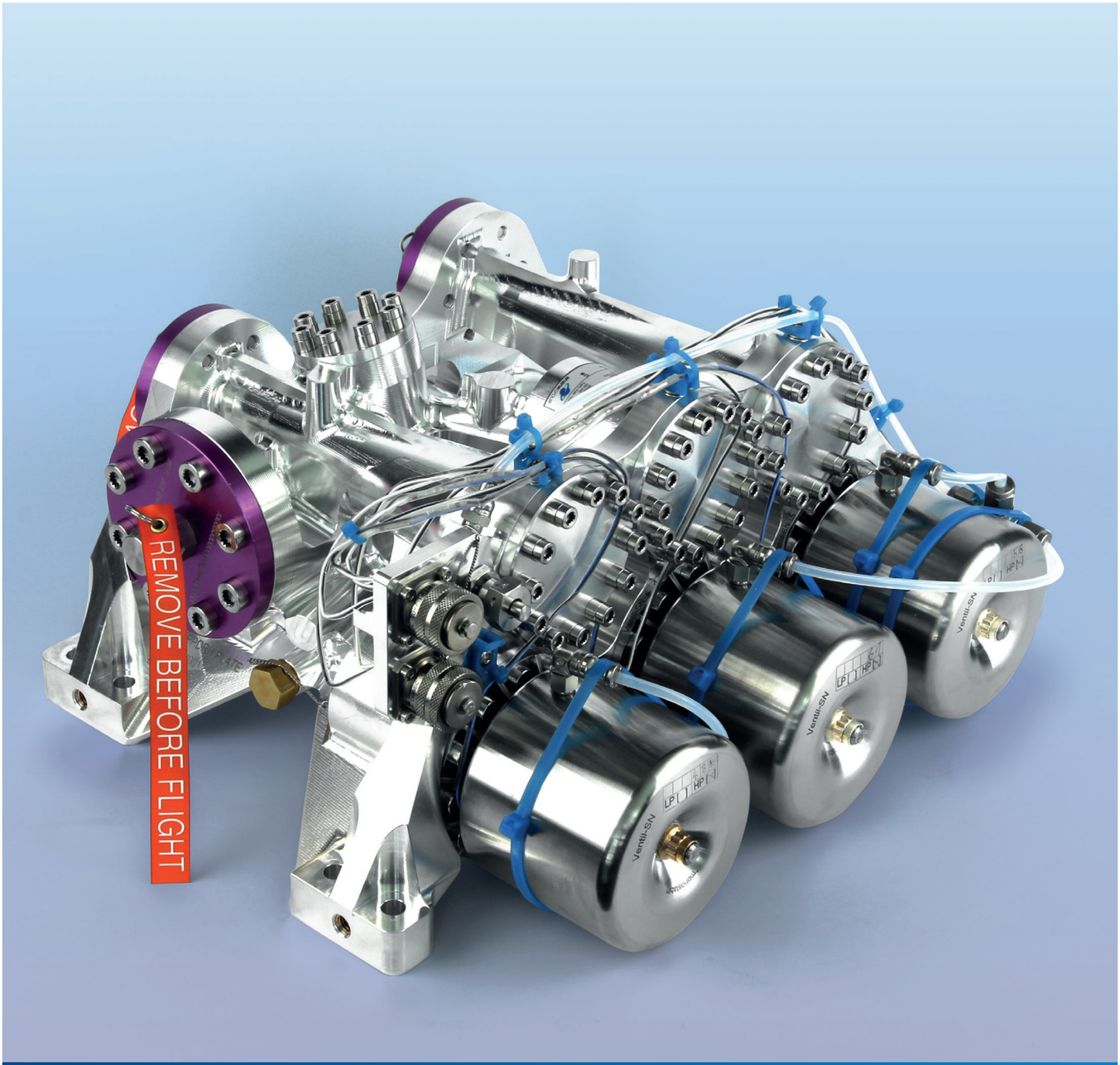


# SOLENOID SYSTEMS

## LIQUID PROPULSION EQUIPMENT

- FLIGHT PROVEN RELIABILITY
- VIBRATION AND SHOCK RESISTANT
- CRYOGENIC AND STORABLE PROPELLANT SOLUTIONS
- CUSTOMIZED INTERFACES
- DIRECT SUBSYSTEM ENGINEERING AND INTEGRATION

# Solenoid Systems

ArianeGroup has unique expertise on solenoids for launch vehicle applications with more than 1,000 units contributing to mission success, delivering **100% achieved reliability** in flight and **100% availability** during launch operations.

## What we offer:

- **Strong heritage,** with flight proven solutions for pressurization, roll, and attitude control
- Family of **lightweight** products, with deep subsystems integration
- Easily **adaptable** to specific Interface situations:
  - Standalone valve in aluminium housing, user defined interface
  - Valve cartridge for direct integration into a sub-system housing

### Cryogenic Propellant Solenoids ("C"):

- Qualified for extreme conditions down to 4 Kelvin
- Mono and bi-stable versions available
- Hydrogen/Oxygen compatible*
- Up to 150 bar
- Up to Kv~9.3 [m³/h]; ESEOD~18.9 [mm]

### Storable Propellant Solenoids ("S") :

- Human rated
- MMH/NTO/MON compatible
- Mono and bi-stable versions available
- Up to 400 bar
- Up to Kv~0.5 [m³/h]; ESEOD~4.4 [mm]

* valve type dependent

| MODEL | SV-86-55-CR-H | SV-86-28-C-H | SV-80-55-CR-H | SV-30-55-CR-H | SV-30-28-CR-H | LV-93-55-CR | SV-5-28-S | LV-5-28-R-S |
|---|---|---|---|---|---|---|---|---|
| **Type** | Direct Acting | | | | | | | |
| **Mode** | Mono-stable | Mono-stable | Mono-stable | Mono-stable | Mono-stable | Bi-Stable | Mono-stable | Bi-Stable |
| **Propellant**** | "C" | "C" | "C" | "C" | "C" | "C" | "S" | "S" |
| **Operating Pressure [bar]** | 150 | 150 | 15 | 85 | 85 | 20 | 400 | 400 |
| **Proof Pressure [bar]** | 225 | 225 | 22.5 | 127.5 | 127.5 | 30 | 600 | 600 |
| **Kv [m³/h]** | 8.6 | 8.6 | 8 | 3 | 3 | 9.3 | 0.5 | 0.5 |
| **ESOD [mm]** | 18.2 | 18.2 | 17.5 | 10.7 | 10.7 | 18.9 | 4.4 | 4.4 |
| **Temperature [K]** | 20-350 | 20-350 | 20-350 | 20-350 | 20-350 | 4-350 | 233-373 | 233-373 |
| **Redundancy** | Coils | - | Coils | Coils | - | Coils | - | Coils |
| **Voltage [V]** | 55 | 28 | 55 | 55 | 28 | 55 | 28 | 28 |
| **Current [A]** | 1.7 -2.1 Actuation<br>0.6-1.0 Hold open | | | | | 1.7 -2.1 Actuation | 1.8 -3.1 Actuation<br>0.75-1.3 Hold open | 1.9 -3.1 Actuation |
| **Mass [kg]** | 4 | 4 | 3.5 | 3.5 | 3.5 | 2.45 | 1.6 | 1.6 |

**Propellant: "C" = Cryogenic; "S" = Storable

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**INFORMATION**
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