

ACTUATORS AND INSTRUMENTS

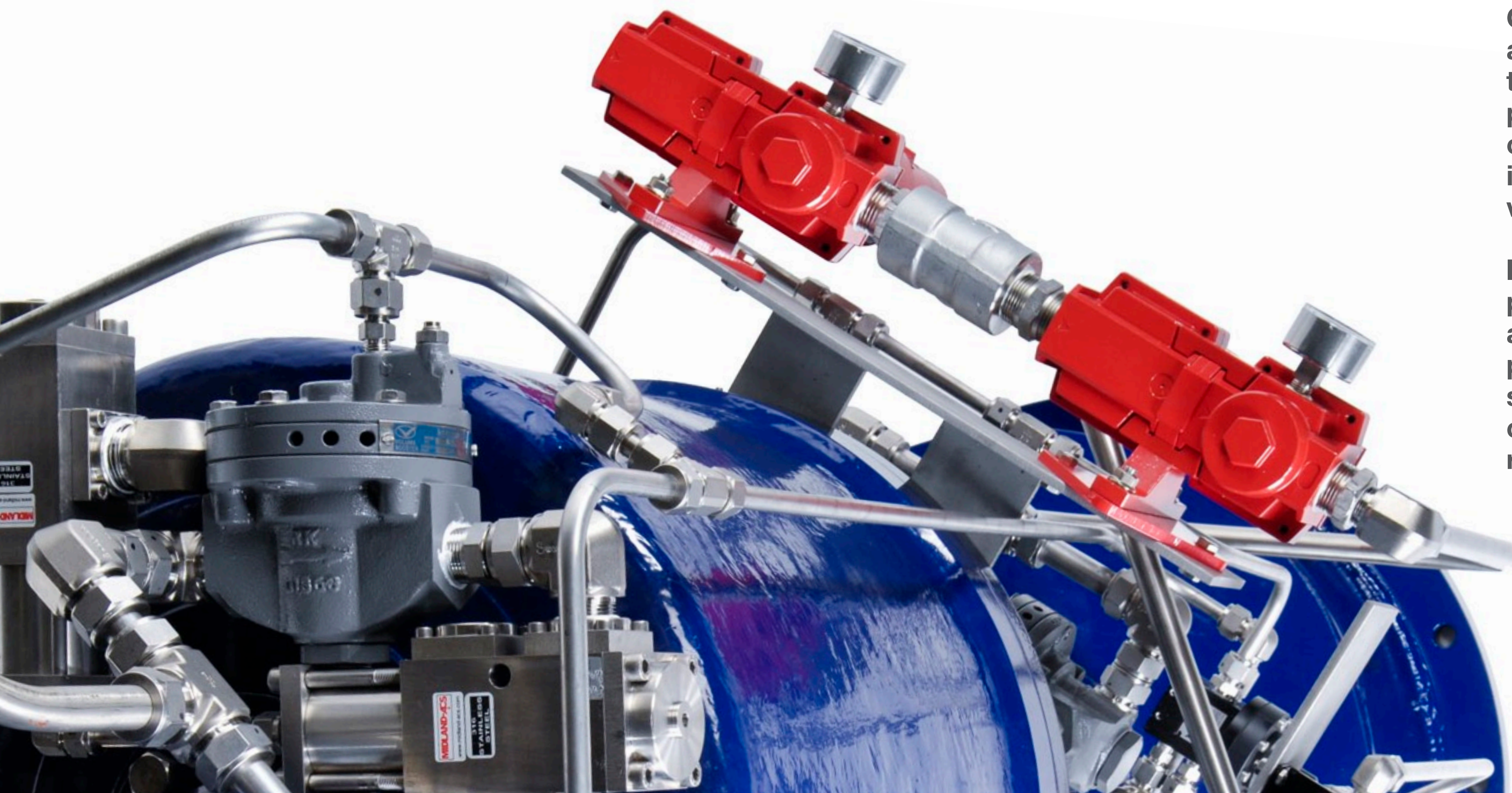
ADVANCED ACTUATORS AND INSTRUMENTS FOR A COMPLETE VALVE CONTROL SOLUTION

KOSO KENT INTROL LIMITED (KKI) SUPPLIES A FULL RANGE OF ADVANCED ACTUATORS AND ASSOCIATED INSTRUMENTATION TO COMPLEMENT ITS COMPREHENSIVE RANGE OF CONTROL AND CHOKE VALVES.

By supplying these specially designed accessories we are able to provide a complete one-stop shop for all your valve-related requirements. Our skilled and experienced engineers will assess your requirements and specify the best combination of valves, actuators and instruments to deliver optimum performance for your application and service conditions.

Our range of robust, versatile and reliable actuators includes the 'G', 'C' and 'D' models of pneumatic actuators. Our range of sophisticated instrumentation includes positioners, airsets, volume boosters and airlocks.

In addition, KKI supplies various proprietary actuators - such as electric, electro-hydraulic, pneumatic and hydraulic stepping actuators - depending on customers' applications and requirements.



ACTUATORS VERSATILE, RELIABLE ACTUATORS FOR EVERY VALVE APPLICATION

THE KKI RANGE OF PNEUMATIC ACTUATORS HAVE BEEN DEVELOPED TO MEET THE NEEDS OF ALL CONTROL VALVE APPLICATIONS. ALL KKI ACTUATORS OFFER PROVEN DESIGN (40 YEARS) AND HIGH RELIABILITY. THEY ARE USED EXTENSIVELY FOR ON-SHORE, OFFSHORE AND POWER INSTALLATIONS.

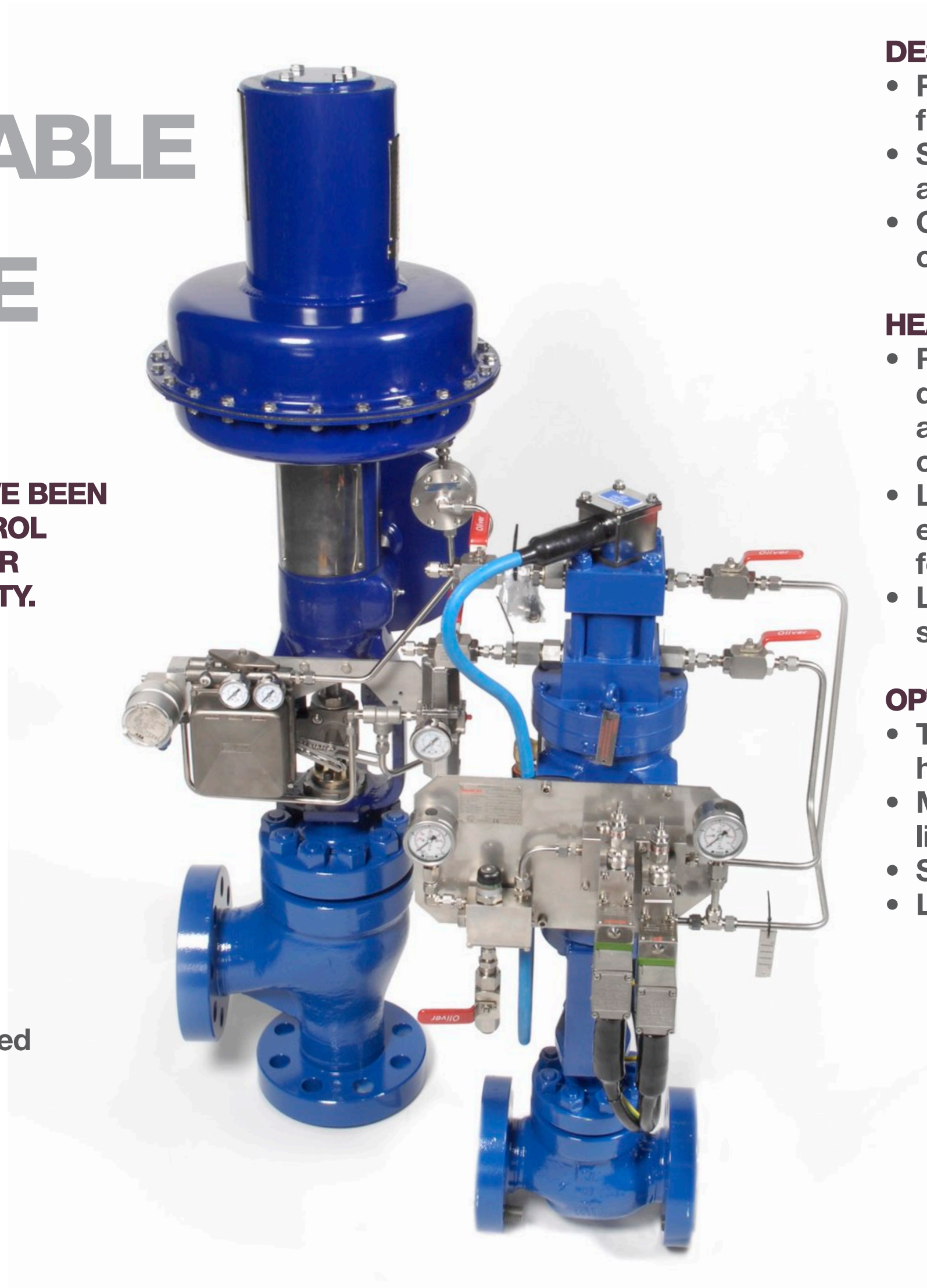
WHY CHOOSE KKI ACTUATORS?

Exceptional performance:

- High power.
- Fast response.
- Low hysteresis.

QUALITY MANUFACTURING:

- High-quality materials with full traceability throughout manufacture.
- Manufactured in a BS/EN ISO 9001 quality-assured environment.
- Comprehensively tested to ensure specified performance on site.



DESIGN FLEXIBILITY:

- Reversible fail action in the field with no need for extra parts.
- Split coupling for simple attachment to plug stem.
- Compatible with a wide range of valve sizes and accessories.

HEAVY-DUTY PARTS:

- Robust steel construction, designed to work in corrosive atmospheres - no copper or copper bearing alloy options.
- Low stressed components, enabling boosters to be fitted for shortened stroking times.
- Long-life alloy steel actuator springs.

OPTIONS

- Top and side mounted hand-wheels.
- Maximum and minimum limit stops.
- Special paint finishes.
- Low temperature -46 °C option.

SERIES G PNEUMATICALLY OPERATED SPRING-OPPOSED DIAPHRAGM ACTUATORS

For standard applications, the Series G diaphragm actuator offers the following benefits:

- Simple cost-effective design.
- Long life and reliability.
- Low cost, simple maintenance.
- High-performance, low-friction rolling diaphragm delivers hysteresis comparable with piston types.

SPECIFICATIONS

SIZES: 75, 150 and 300

TRAVELS: $\frac{3}{4}$ " to 12" (19mm to 300mm)

MINIMUM WORKING TEMPERATURE

90°C as standard, minus 50°C special

Our highly successful Series G actuators use an involute rolling diaphragm that permits long travels without the need for the expensive hardware normally associated with rolling diaphragms. The modular design allows various optional extras to be retrofitted without modifying the basic unit.



SERIES C SPRING-RETURN PNEUMATICALLY OPERATED PISTON ACTUATORS

Designed without linkages and with minimal working parts, this actuator offers built-in reliability and low maintenance costs. Series C actuators are always operated through a valve positioner, with two types available to suit different applications.

The frequency response of this piston actuator is extremely high, and is superior to comparable diaphragm units. Its linear response to a signal change is unaffected by increasing or decreasing pressure, with sensitivity being maintained over the working range.

SPECIFICATIONS

SIZES: 300 sq.in.

TRAVELS: ¾" to 12" (19mm to 300mm)

MINIMUM WORKING TEMPERATURE:

90°C as standard, minus 50°C special



Used for both positive throttling and on/off applications on automatic control valves, Series C actuators comprise a single-spring power unit that gives distributed loadings for smooth operation. The piston is fitted with seals and operates in a 'honed' steel cylinder, delivering smooth travel and minimising hysteresis and wear.

SERIES D DOUBLE-ACTING PNEUMATICALLY OPERATED PISTON ACTUATORS

Ancillary equipment comprising a three-way switching valve, lock-up valve and a check valve is required, in addition to the volume tank and pipework. The existing positioner must be set for double-action operation.

SPECIFICATIONS

SIZES: 300 sq.in.

TRAVELS: $\frac{3}{4}$ " to 12" (19mm to 300mm)

MINIMUM WORKING TEMPERATURE:
90°C as standard, minus 50°C special



Series D actuators are created by removing the spring return feature from a Series C actuator and inserting a seal plate. This provides a double-acting piston. Extra power may be obtained for the air fail action by releasing a stored volume of air contained in a separate tank.

INSTRUMENTS TECHNICALLY ADVANCED INSTRUMENTS FOR PRECISE VALVE CONTROL

Koso Kent Introl Limited offers a wide selection of instruments to support its range of high-performance valves and actuators. Instrumentation is specified to meet the needs of each customer and application. The instruments we supply include positioners, airsets, volume boosters and airlocks.

KKI also supplies proprietary instruments to suit installed bases or customer preferences, where required.



INSTRUMENTS POSITIONERS

- Pneumatic P3300
- Electro-pneumatic P3300i

PERFORMANCE SPECIFICATIONS

REPEATABILITY: <0.3%

ACCURACY: +/-1%

HYSTERESIS: <0.5%

TEMPERATURE RANGE (OPERATING): minus 20°C to 60°C
(minus 40°C to specification)

ENVIRONMENTAL PROTECTION: IP55

CONSTRUCTION

CASE: Epoxy-painted aluminium as standard (stainless steel option)

COVERS: Epoxy-painted polyester/aluminium as standard
(stainless steel option)

INTERNALS: Brass/steel/aluminium (all stainless steel option)

ADJUSTMENTS

Zero and span adjustments on the I/P module are easily accessible and non-interactive.

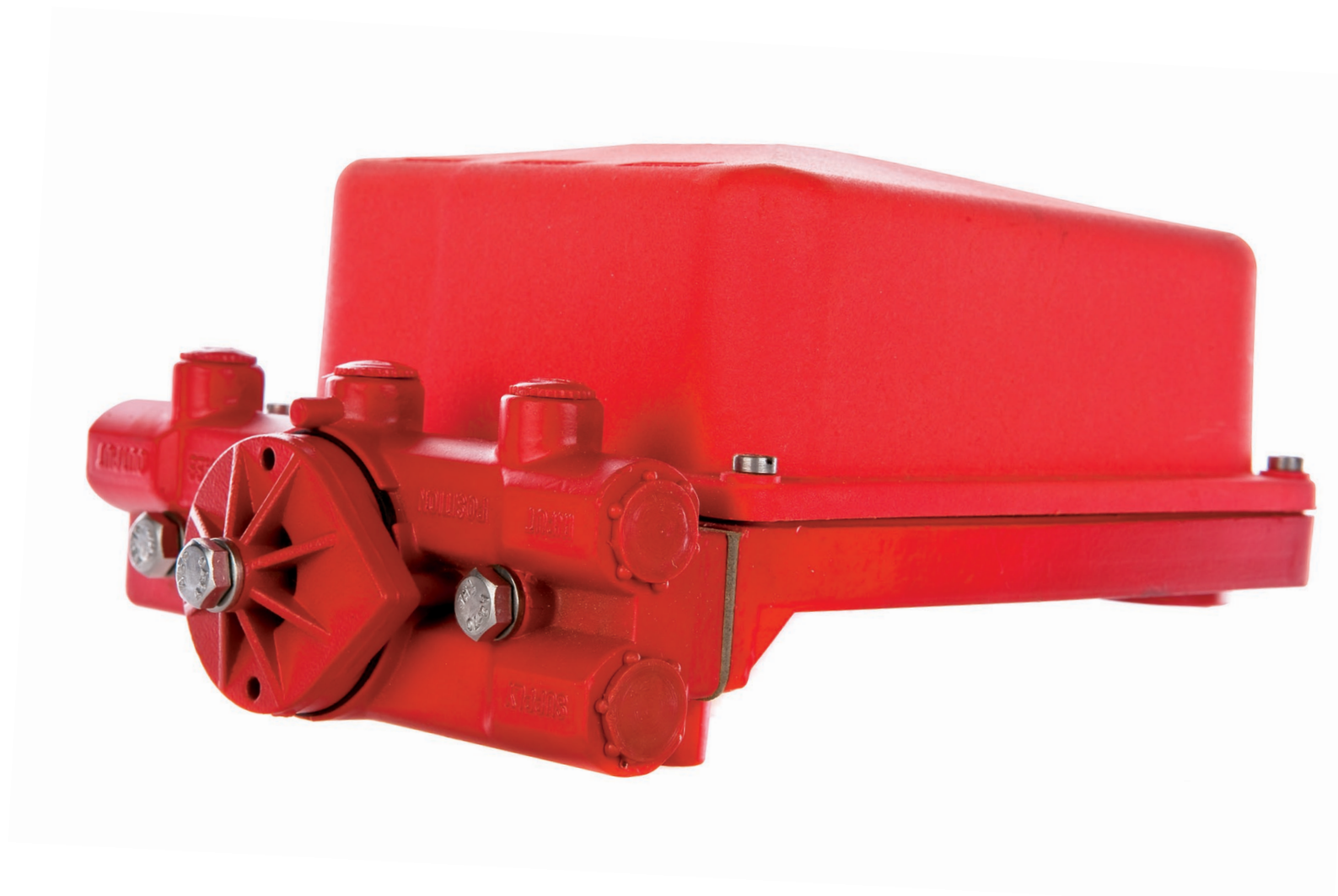
- Intelligent electro-pneumatic positioner TZID-C

CASE: Aluminium/Belzona P65(NEMA 4X)

INPUT: 4-20mA with connector plug for LKS adaptor. FSK module for frequency shift keying.

OPTIONAL: Analogue or digital feedback.

This series includes the P3300 pneumatic valve positioner and the P3300i milliamperere signal version, which includes all the features of the P3300 but can operate from a standard 4-20mA signal. These positioners have a robust, rugged case, constructed from aluminium or stainless steel. They are mounted on a heavy-duty plate, which is able to withstand rough handling and vibration.



INSTRUMENTS

SERIES A AIRSETS

Our Series 'A' filter regulators are compact, lightweight and provide long-life performance in the most hostile environments. They are supplied with an epoxy-coated mounting bracket and feature an easily removable metal bowl. The series includes A11, A12 and A13 models.

- **A11**

INLET/OUTLET PORTS: 1/4" NPTF

FLOW RATE: 2,000 normal litres per minute

- **A12**

INLET/OUTLET PORTS: 1/2" NPTF

FLOW RATE: 5,000 normal litres per minute

- **A13**

INLET/OUTLET PORTS: 1" NPTF

FLOW RATE: 8,000 normal litres per minute

COMMON FEATURES

BODY/BOWL MATERIAL: Epoxy-coated aluminium

MAX. SUPPLY PRESSURE: 15 bar

MAX. OPERATING PRESSURE: 10 bar

AMBIENT AND MEDIA TEMPERATURE: 5-60°C

DRAIN: Manual



INSTRUMENTS

316 STAINLESS STEEL FILTER REGULATOR

SELF-RELIEVING FILTER REGULATOR

This stainless steel combination unit is used for filtration and pressure regulation of compressed air for the offshore, food, pharmaceutical and related industries.

It features:

- 316 stainless steel throughout.
- Large flow paths to minimise pressure drops.
- Rolling diaphragm design.
- Precision adjustment.

INLET/OUTLET PORTS: 1/4" and 1/2" NPTF

FLOW CAPACITY: 1/4" - 130 SCFM. 1/2" - 212 SCFM

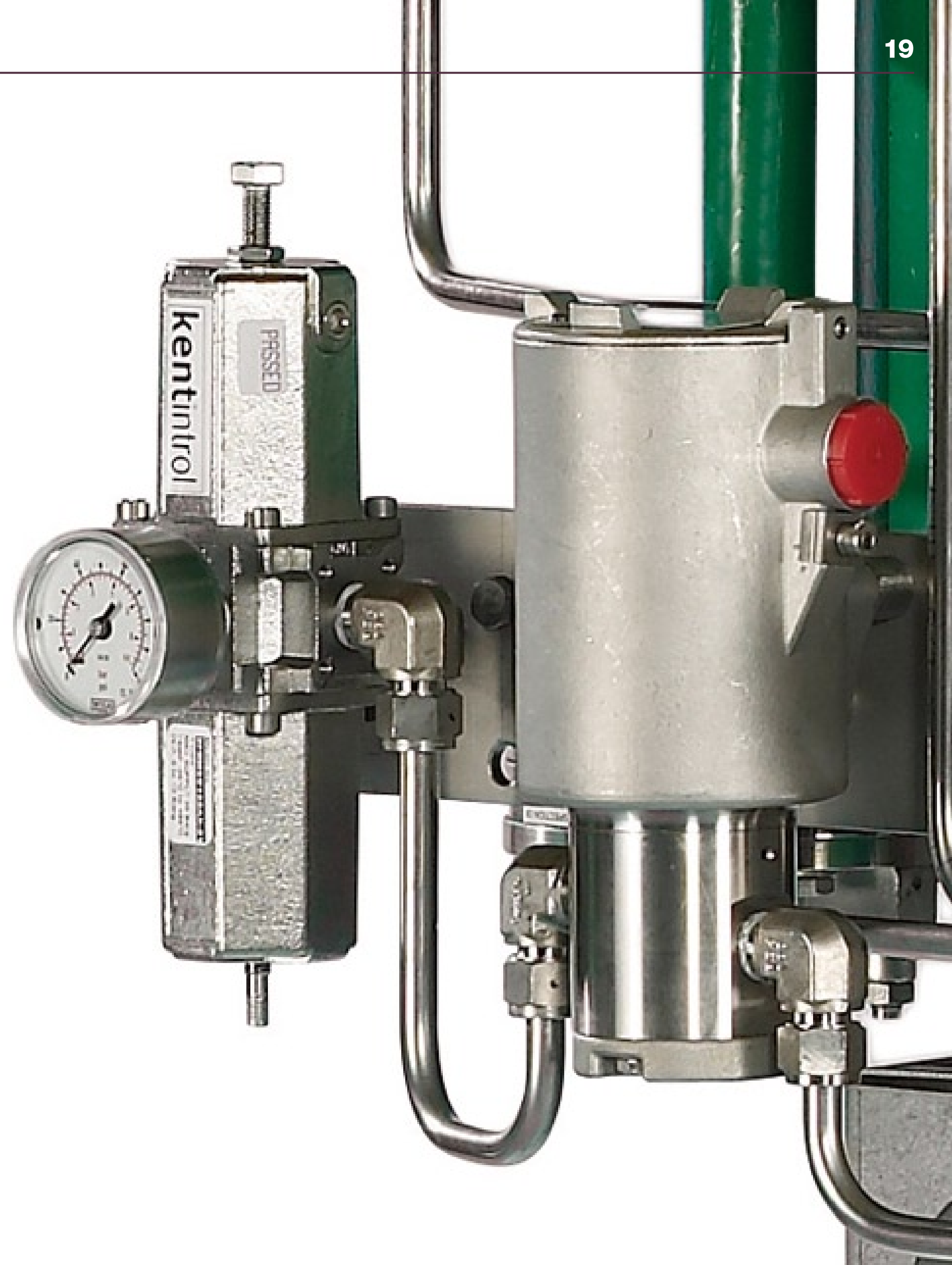
MAX. INLET PRESSURE: 20 bar

REGULATED PRESSURE: 0.50 to 12 bar

WORKING TEMPERATURE: minus 20°C to 80°C

(low temperature version to minus 50°C)

DRAIN: Manual



INSTRUMENTS

VOLUME BOOSTERS

SERIES 1000 AND 3000

KOSO KENT INTROL LIMITED SUPPLIES SERIES 1000 AND SERIES 3000 VOLUME BOOSTERS. THESE DEVICES REPRODUCE PNEUMATIC SIGNALS IN 1:1 RATIO AND CAN BE USED TO IMPROVE THE STROKING SPEEDS OF PNEUMATIC ACTUATORS OR TO INCREASE FLOW CAPACITY.



- **SERIES 1000**

PORT SIZE: 1/4" in NPTF

MAX. SUPPLY: 100psi (6.9 bar)

INPUT/OUTPUT RATIO: 1:1

LINEARITY: 0.4%

TEMPERATURE: minus 40°C to 70°C

FLOW CAPACITY: 10 SCFM

MATERIALS: Aluminium & 316 Stainless Steel

- **SERIES 3000**

PORT SIZE: 1/2" in NPTF

MAX. SUPPLY: 150psi (10.3 bar)

INPUT/OUTPUT RATIO: 1:1

LINEARITY: 0.4%

TEMPERATURE: minus 40°C to 70°C

FLOW CAPACITY: 43 SCFM

MATERIALS: Aluminium & 316 Stainless Steel

WHY CHOOSE KKI VOLUME BOOSTERS?

- **Quick response** - boosters greatly increase actuator stroking speeds.
- **Increased stability** - allow a normal slow actuator response to small signal changes produced by usual process variations.
- **Low air consumption** - soft seat provides tight shut-off, preventing unnecessary air consumption.

FOR MAXIMUM PERFORMANCE, WHEN USED ON DIAPHRAGM ACTUATORS, THE VOLUME BOOSTER UNIT SHOULD BE INSTALLED AS CLOSE AS POSSIBLE TO THE ACTUATOR.

INSTRUMENTS

AIRLOCKS PA SERIES

THIS AIRLOCK IS DESIGNED TO BLOCK THE PRESSURE IN THE DIAPHRAGM CHAMBER OF AN ACTUATOR WHEN THE AIR PRESSURE FALLS BELOW THE DESIRED SET VALUE (1.0-4.0KG/CM2).

The airlock design has a built-in relief valve which exhausts air from the diaphragm chamber if there is a need to manually operate the actuator, thereby preventing damage to the actuator diaphragm.

FEATURES:

- Robust design for long-life performance.
- Compact size and low weight.
- Available in epoxy-painted aluminium or stainless steel.
- Easily adjustable.
- Mounting bracket supplied as standard.
- Connector - 1/4" NPT.
- Material - Aluminium/Epoxy paint
- Stainless steel.

