

NFPA STANDARD MOUNTS

All mountings are NFPA compliant and can be interchanged with other cylinders meeting NFPA standards.

NITROTEC TREATED MATERIALS

Nitrotec is a patented furnace treatment process which converts the steel surface into an extremely hard black iron nitride layer. It is superior to chrome plating in that the nitriding is diffused into the steel surface rendering the surface nonporous. There is no flaking or lifting as with overlying chrome on a softer material.

Nitrotec delivers an exceptional surface hardness of up to 71 Rc, improves corrosion resistance and minimizes friction loss for long seal and gland bushing life.

The **Nitrotec** process also gives an extremely hard dent-resistant finish to materials. Beneath the outer surface is a diffusion zone which gradually reduces in hardness to approximately 40 Rc at 0.015" depth. This diffusion zone acts as a **case-hardening** which is much superior to the relatively soft material underlying chrome plate.

Nitrotec Piston Rod

The piston rod is **Nitrotec** treated C1045 carbon steel. Other rod materials are available including chrome plated 316 stainless steel and chrome plated carbon steel. If you require a rod size that is not included in this catalog contact the factory for information regarding availability and dimensions.

Nitrotec Barrel

Nitrotec treated steel is the standard barrel material. Other barrel materials are available upon request including chromed I.D. steel, Brass and Amalgon.

TEFLON® / HYTHANE® SEALS

The piston seal is a double acting **Teflon**® impregnated compound to reduce friction yet enhance seal life. It has an exceptional temperature range of from -40 to 275°F. The **Hythane**®* rod seal is a high performance, high temperature seal compound having ultra low friction and long seal life. Its temperature range is from -40 to 230°F. The **Hythane**® rod wiper, with internal ribs for extra stability and prevention of pressure trapping, cleans the rod on the return stroke. The static external seal is Buna-N material.

ROTOCAST BRONZE GLAND BUSHING

The gland bushing is manufactured from Rotocast bronze for low friction and long bearing life. Other materials such as Zincoaloy are available upon request. A snap ring retainer allows for easy removal of the bushing for maintenance without dismantling the cylinder. Optional gland bushings with wear rings may be available, contact the factory.

COLD FINISHED HEADS

Heads are precision machined from high quality cold finished steel for perfect alignment of barrel and moving parts. For the 1½" bore and all bores 3¼" and larger, the heads are common for all rod sizes. This allows the end user to lower costs by stocking only one head for all rod sizes. The common head design also enables customers to increase or decrease rod sizes with little effort or expense. Due to space constraints on the 2" bore, the heads are

common between the 1" and 1¾" rod sizes only. On the 2½" bore the heads are common only on the 5/8" and 1" rod sizes.

IMPROVED CUSHIONING:

Floating Check Seals

Cushions are now standard in our pneumatic cylinders. They have been redesigned with a new floating check seal that provides quick and reliable breakaway performance. They are made from the same long wearing **Hythane**® material.

Lengthened Cushion Sleeves

Our cushion sleeves have been lengthened with a new profile to provide a more effective cushion. On some of the smaller sizes that cannot fit a floating check seal, the cushion sleeve itself is floating. This eliminates the possibility of metal "pick-up" and premature wear. In addition, this floating sleeve has a locational-memory feature which centers the sleeve after the first cylinder cycle and holds its position thereafter to eliminate wear from repeated radial displacement.

Flush Mount Needle Valves

Needle valves are now the flush mount style and allow a fine adjustment. The standard location is at position 4, but they can be specified elsewhere. Contact the factory for cushioning options on the gland end of the 1½" bore (both rod sizes), and the 2" bore (1" and 1¾" only rod sizes).

CONVERTING TO NON-CUSHIONED

All heads are manufactured with integral cushion features making a conversion from a cushioned to a non-cushioned cylinder a simple, inexpensive process. To convert to a non-cushioned cylinder simply remove the check seal. If no check seal exists, as on the rod end of some smaller bore sizes, remove the cushion sleeve.

ONE-PIECE ALUMINUM PISTON

The piston is a one-piece design, aluminum construction, incorporating a replaceable wear ring to prevent metal to metal contact and increase the life of the cylinder.

NPTF / SAE PORTS

NPTF ports are standard at position 1 but can be specified in other positions. SAE straight thread O-ring ports are available at no additional cost.

REDUCED AIR PRESSURE REQUIREMENTS

The combination of seals and materials used within Royal air cylinders reduces internal friction thus reducing air pressure requirements. Reducing air pressure lowers consumption costs. Testimonials from customers show a reduction in pressure from 10 to 30%.

INTERNAL / EXTERNAL PISTON STOP

Standard external or optional internal piston stops are available to reduce stress on the piston rod for all cylinder sizes.

STROKE POSITION SENSORS

Proximity sensors or other switches can be fitted in most models. Contact the factory for details.

CUSTOM CYLINDERS

If our standard product does not meet your specifications, Westcoast Cylinders will manufacture custom cylinders to meet your requirements. Please contact the factory.

SPARE PARTS

Genuine Royal seal kits include all seal components, wear rings and needle valves. Please ensure to specify genuine Royal replacement parts to ensure you will receive all feature benefits.

* *Hythane*® is a registered trademark of Hallite Seals International Ltd.

