

Industrial Products Catalog

Valve Cores



Construction information

Materials

Brass, Stainless Steel

Sealing Materials

Polychloroprene, Nitrile-Butadine, Hydrogenated Nitrile-Butadine, Fluorocarbon, EDPM, Elastomer

Finish

No Plating, Nickel or Tin plated Brass

Valve cores are defined by their characteristics, and depending on the type selected, these characteristics vary depending on the material, the finish and the design of each valve core.

- **Opening Pressure** This is the minimum air pressure necessary to overcome the resistance of the spring that keeps the valve closed, allowing air to pass through.
- **Minimum and Maximum Travel** This is the recommended distance the pin can travel without damaging the valve core.

A Schrader® valve consists of a hollow cylindrical metal tube, typically brass, with the exterior end threaded. The interior end form varies depending on the application of the valve. In the center of the exterior end is a metal pin pointing along the axis of the tube; end of the pin is approximately flush with the end of the valve body.

There are a number of options for customers wishing to purchase valve cores in both the OEM and aftermarket sectors, see the product part tables following for more information.

Most Schrader® valves used on tires have threads and bodies with a standard exterior size allowing for universal caps and tools whether the tire is on an automobile, bicycle or even a wheelbarrow or lawnmower. A Schrader® valve can be used to control air, nitrogen, R12, R22, R134a, oils, Halon, SF6, Petrols, butane and propane, and any other controllable media.




The valve core is made up of 3 main pieces:

- The bridge for screwing the valve core into its housing.
- The seat with its joint providing a static seal from the valve body.
- The valve with its spring for introducing or draining fluid and guaranteeing sealing under pressure in the rest position.








Valve Cores

Air Conditioning

| | | | | |
|--|--|---|---|---|
|  |  |  |  | |
| 8081530070 | 8081540070 | 8081900047 | 8089000070 | |
| JRA Cores | | 5.232x0.708mm Core | 8mmx6g Core | |
|  |  |  |  |  |
| 8080570047 | 8080580047 | 8081000047 | 8081120047 | 8081100047 |
| Positive Stop Cores | | | 8mm Cores | |
|  |  | | | |
| 8081220047 | 8081210047 | | | |
| 10mm Cores | | | | |

Miscellaneous

| | | | |
|---|---|---|--|
|  |  |  | |
| 015660113 | 8039700047 | 062310100 | |
| Snifter Applications | Long Pin Assembly | Large Bore Core | |
|  |  | | |
| 060350001 | 099141117 | | |
| Standard Core | High Pressure Core | | |

Standard Air

| | | |
|--|---|---|
|  |  |  |
| 045750035 | 054051000 | 085000020 |
| Positive Stop Cores | | |

Propane, MAPP, Gas and Oxygen

| | | | |
|--|---|---|---|
|  |  |  |  |
| 011080003 | 083445501 | 062281501 | 062471503 |
| Positive Stop Cores | | | |

Fuel System Cores

| | | | |
|---|--|--|--|
|  |  |  |  |
| 8080721047 | 8080731047 | 8080801047 | 061810020 |
| Positive Stop Cores | | | |

Air Conditioning

| Part No. | Opening Pressure PSIG | Max. Working Pressure PSIG | Temp Range °F | Installation Torque IN.-LBS | Dynamic Sealing Surface | Surface Finish |
|------------|--------------------------|-------------------------------|------------------|--------------------------------|-------------------------|----------------|
| 8080570047 | 40 | 800 | -20 to 220 | 3-5 | Neoprene | Plated |
| 8080580047 | 40 | 800 | -20 to 200 | 3-5 | Neoprene | Unplated |
| 8081000047 | 40 | 800 | -10 to 300 | 3-5 | HNBR | Plated |
| 8081100047 | N/A | 800 | -40 to 245 | 10-20 | Neoprene | Unplated |
| 8081120047 | N/A | 800 | -40 to 245 | 10-20 | HNBR | Unplated |
| 8081210047 | N/A | 800 | -40 to 245 | 15-30 | Neoprene | Unplated |
| 8081220047 | N/A | 800 | -40 to 245 | 15-30 | HNBR | Unplated |
| 8081530070 | N/A | 800 | -40 to 245 | 5-10 | HNBR | Plated |
| 8081540070 | N/A | 800 | -40 to 245 | 5-10 | HNBR | Unplated |
| 8081900047 | N/A | 400 | -40 to 210 | 3.5-7 | N/A | Plated |
| 8089000070 | N/A | 400 | -40 to 210 | 6.2-9.7 | N/A | Plated |

Standard Air

| Part No. | Opening Pressure PSIG | Max. Working Pressure PSIG | Temp Range °F | Installation Torque IN.-LBS | Dynamic Sealing Surface | Surface Finish |
|-----------|--------------------------|-------------------------------|------------------|--------------------------------|-------------------------|----------------|
| 045750035 | 25 to 35 | 200 | -40 to 165 | 3-5 | Nitrile | Unplated |
| 054051000 | 90 | 250 | -65 to 300 | 3-5 | Silicone | Plated |
| 085000020 | 60 to 75 | 300 | -40 to 225 | 3-5 | Nitrile | Unplated |

Fuel System Cores

| Part No. | Opening Pressure PSIG | Max. Working Pressure PSIG | Temp Range °F | Installation Torque IN.-LBS | Dynamic Sealing Surface | Surface Finish |
|------------|--------------------------|-------------------------------|------------------|--------------------------------|-------------------------|----------------|
| 8080721047 | 40 | 500 | 0 to 450 | 3-5 | Viton | Plated |
| 8080731047 | 40 | 500 | -40 to 450 | 3-5 | Viton | Plated |
| 8080801047 | 40 | 500 | -30 to 400 | 3-5 | GFLT | Plated |
| 061810020 | 45 | 500 | -20 to 350 | 3-5 | Viton | Unplated |

Propane, MAPP, Gas and Oxygen

| Part No. | Opening Pressure PSIG | Max. Working Pressure PSIG | Temp Range °F | Installation Torque IN.-LBS | Dynamic Sealing Surface | Surface Finish |
|-----------|--------------------------|-------------------------------|------------------|--------------------------------|-------------------------|----------------|
| 011080003 | 45 | 525 | -45 to 300 | 3-5 | Viton | Plated |
| 083445501 | 45 | 300 | -20 to 165 | 3-5 | Epichlorohydrin | Plated |
| 062281501 | call for details | N/A | -40 to 250 | Custom | Viton | Plated |
| 062471503 | call for details | N/A | -40 to 250 | Custom | Epichlorohydrin | Unplated |

Miscellaneous

| Part No. | Opening Pressure PSIG | Max. Working Pressure PSIG | Temp Range °F | Installation Torque IN.-LBS | Dynamic Sealing Surface | Surface Finish |
|------------|--------------------------|-------------------------------|------------------|--------------------------------|-------------------------|----------------|
| 015660113 | 0.2 to 4 | 15 to 150 | -10 to 165 | 3-5 | Nitrile | Plated |
| 8039700047 | N/A | 200 | -2 to 167 | 3-5 | Nitrile | Plated |
| 060350001 | 50 | 550 | -65 to 350 | 3-5 | Silastic | Plated |
| 099141117 | 80 | 4000 | -40 to 225 | 3-5 | Nitrile | Plated |
| 062310100 | 55 | 200 | -65 to 300 | 3-5 | White Silicone | Plated |

Valve Core Installation

Installation Guide

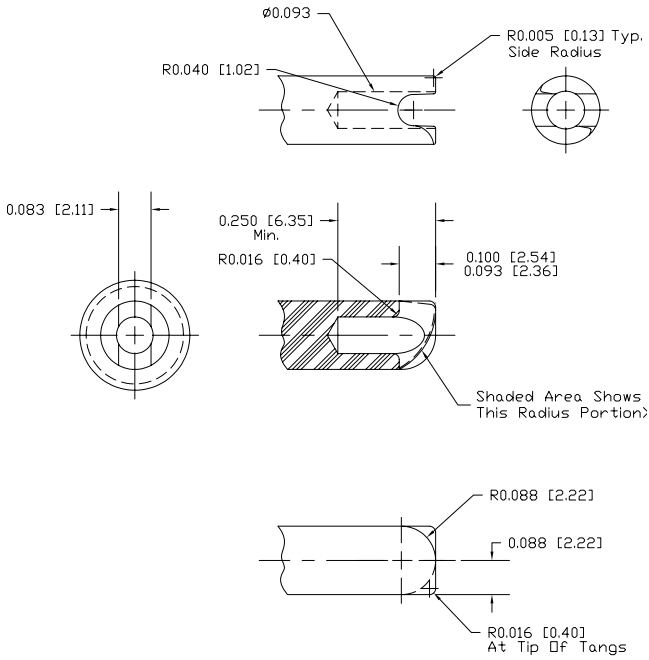
Scope

This engineering guide is to cover the installation and application recommendations for the use of standard valve cores in all automotive and industrial applications.

Product Type

Standard valve cores are defined by ISO (International Standards Organization), TRA (Tire & Rim Association) and ARI (American Refrigeration Institute) relative to the application for air, fluid and gas service devices.

Installation Torque



The installation torque for standard cores per ISO is 3 – 5in. lbs. [0.34 – 0.57 Nm]. Breakaway torque is not an accurate way to verify the installation torque due to material, lubricants and other conditions that may exist.

Torque Drivers

For automated assembly, it is recommended to use only drafted torque driver bits that are more forgiving reducing the damage to the valve core creating chips that may cause leaks in the final assembly.

Temperature Sensitive

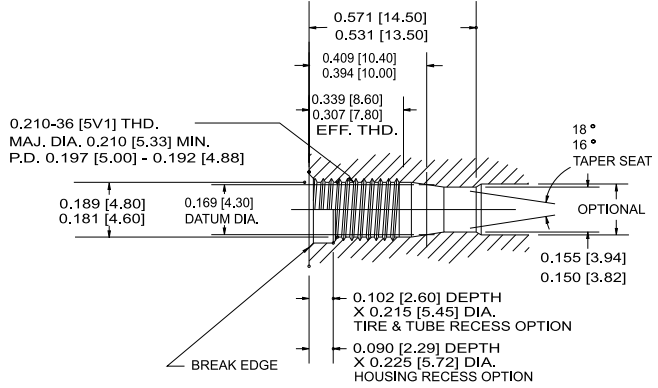
It is not recommended to submit the Valve Core assembled into a Valve Body to accelerated temperatures above the normal operating temperatures such as brazing and oven curing for paints and other coating processes. Permanent damage to the seals may occur causing long term sealing problems.

Cleanliness

Cleanliness for the Valve Cores and Body must be less than 0.015 grams per 100 parts after final assembly. Using improper torque drivers can cause contamination.

Standard Core Drilling

Core chamber must conform to ISO 7442 and threads must be to ISO 4570/1



All Valve Bodies must conform to the TRA, ISO or ARI recommended standard core drilling to ensure proper seating of the Valve Core to meet the sealing and pin height requirements of the individual industry standards.

Surface Finish

The importance of a properly machined housing cannot be overemphasized. The surface finish of the taper seat must be smooth without any machining tool marks. The proper taper seat angle must also be met to ensure proper compression of the outer Valve Core sealing material.

Serviceability

No Valve Cores are to be reused under any circumstances after removal from the Valve Body. Always install a new Valve Core when servicing the system for air, fluid or gas applications.

The right tools for the job

Proper core installation is important to ensure correct pin height and leak free performance. Schrader recommends that tools designed specifically for the task be used. Schrader offers a variety of purpose driven tools for the job.

Torque wrench insures that valve cores are installed to the proper torque.



20141

Standard handle core tool for standard valve cores.



296970

4-way valve core tool



90-344

Other tools are available for non-standard cores.





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CORES-0411