Introduction

Today many different types of connectors are being used around the world. Most of these have come about through historical use and local preference for a certain design concept. Some connections of North American origin such as SAE straight thread and 37o flare, have found some degree of acceptance and use in Europe and Japan as a result of exports of U.S. machinery to these regions after World War II. However, a large majority of usage is made up of a variety of indigenous port and fitting connections. A quick review of the commonly used connections around the world reveals eight different port configurations.

Fortunately, the International Standards Organization (ISO) Technical Committee 131 (ISO/TC131) has developed standards for the most widely used ports and connectors to limit proliferation. The result is five port designs and Racor offers the four most popular, listed below:

Standard Fuel Ports

Racor's standard port configuration is the SAE J1926 (ISO 11926-1) design for straight thread with O-ring seal. This design sandwiches and compresses an O-ring between the angular sealing surface of the female port and the shoulder of the male end.

Also available is SAE J476, Dryseal American standard taper pipe thread. Racor provides this port in the NPTF (dryseal) configuration. In this design, the male/female thread crest and roots contact and then flatten allowing the flanks to make full contact. Thread sealants are recommended with this design.

Metric Fuel Ports

Available for a European or export market is the new 'world standard' ISO6149 (SAE J2244, DIN 3852-3) metric straight thread O-ring port, which is similar in the seal design to the SAE J1926 version above.
For Germany and other applications, the ISO 9974 (DIN 3852-1) configuration is available for sealing on the port surface or 'spot-face.' In this design, a captive seal is compressed against a smooth flat radial surface on the mating part.

Parker/Racor Connector Fittings

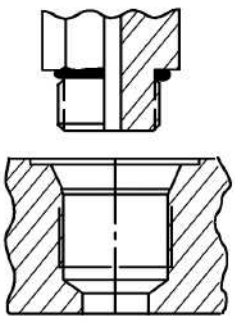
Racor primarily offers the JIC 37o flared fitting design because it can be used to connect to inch tubing, metric tubing and hose assemblies. This versatility offers customers a greater international acceptance as compared to other fitting styles.

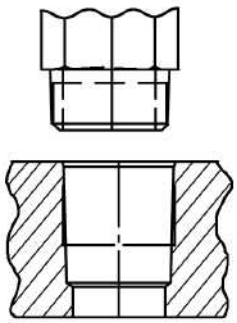
The standard rubber seals and O-rings used in Parker fittings are 90 durometer hard, low-swell buna-nitrile (NBR), which meets or exceeds Parker specification #N0552. This compound is suitable for use with all grades of diesel, gasoline, synthetic or petroleum based engine oils, and natural gas (CNG) applications. Typical temperature range is -30o to 225oF (-34o to 107oC). Note: not recommended for use with phosphate ester base hydraulic fluids, automotive brake fluids, strong acids, ozone, freons, ketones, halogenated hydrocarbons, and methanol.

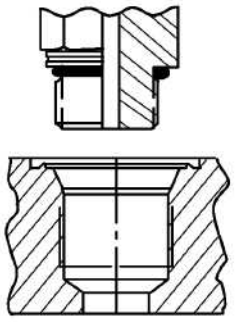
The ports shown on the next page are the thread styles that Racor produces. The most common threads are from top-left to bottom-right.

Marine Fittings

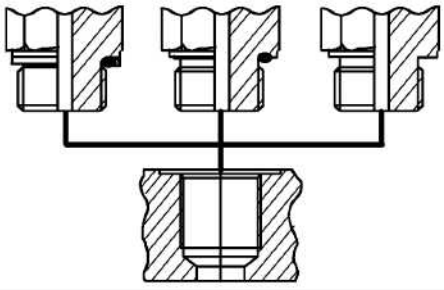
Port & Thread Information

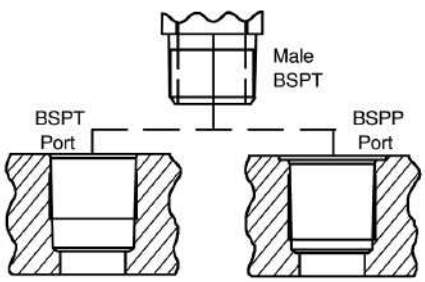






Port Description	SAE Straight Thread O-ring Port	NPTF – Dryseal American Standard Taper Pipe	Metric Straight Thread O-ring Port
Thread Type	ISO 263 ANSI B1.1, Unified	ANSI B1.20.3	ISO 261 Metric Fine
ISO Number	11926	N/A	6149
SAE Number	J1926	J476	J2244
DIN Number	N/A	N/A	3852-3 Form "W"
Current Use	Widely used in North America. Limited use in rest of the world.	Mainly used in North America with some use in the rest of the world.	Gaining use in U.S. and western Europe. Widely used in former Soviet block countries.





Port Description	Metric Straight Thread Flat Face Port	BSPT/JIS British Standard Taper Pipe
Thread Type	ISO 261 Metric Fine	ISO 7 BS 21 JIS B203
ISO Number	9974	N/A
SAE Number	N/A	N/A
DIN Number	3852-1 Form X or Y	Similar to: 3852-2 Form Z
Current Use	Moderate use in Europe, mainly used in Germany.	Mainly used in Japan and parts of western Europe.

Questions? Contact Technical Support:
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Torque Specifications

SAE J1926 & J2244 Fitting Torque Specs			
SAE Dash Size	Thread Size (UN/UNF)	Assembly Torque	
		in. lbs.	ft. lbs.
3	3/8 - 24	155	13
4	7/16 - 20	205	17
5	1/2 - 20	250	21
6	9/16 - 18	300	25
8	3/4 - 16	540	45
10	7/8 - 14	N/A	85

SAE J476 National Pipe Thread	
Assembly Turns From Finger Tight (T.F.F.T.) Values for Steel and Brass Fittings	
Pipe Thread Size NPTF	T.F.F.T.
1/4 - 18	2 - 2
3/8 - 18	2 - 3
1/2 - 14	2 - 3
3/4 - 14	2 - 3
1 - 11 1/2	1.5 - 2.5

SAE / JIC 37° Male Flare Torque Specs			
SAE Dash Size	Thread Size (UN/UNF	Assembly Torque	
		in. lbs.	in. lbs.
4	7/16 - 20	N/A	N/A
6	9/16 - 18	N/A	N/A
8	3/4 - 16	550 ± 50	1
10	7/8 -14	650 ± 50	1