

The Basics of Fittings

Objectives

- What is a fitting? What is its function?
- Fitting Types & Components
- Fitting Sealing Methods
- Fitting Nomenclature

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What is a fitting? What is its function?

The purpose of a hose fitting is to connect hose to fluid power systems. The fitting must provide a leak-proof seal at the hose and the system interfaces for the system to operate properly.

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Fitting Types & Components

Field Attachable

(aka Reusable)

2-piece

3-piece (Mandrel Style)

Barbed (with Clamp)

Barbed "Push-Lok" (Clampless) <u>Crimp</u> (aka Permanent)

1-piece

2-piece



Fitting Types & Components

Field Attachable

<u>(aka Reusable)</u>

2-piece

3-piece (Mandrel Style)

Barbed (with Clamp)

Barbed "Push-Lok"

(Clampless)

Nipple Socket



Fitting Types & Components





Fitting Types & Components

Field Attachable

<u>(aka Reusable)</u>

3-piece (Mandrel Style)

2-piece

Barbed (with Clamp)

Barbed "Push-Lok" (Clampless) 82 Series Push-Lok Fitting



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Fitting Types & Components



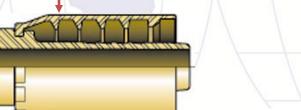


<u>Crimp</u> (aka Permanent)

Crimp fitting comprised of nipple and shell components



2-piece







Fitting Types & Components

- Parker offers one-piece through the cover permanent fittings referred to as Parkrimp fittings
 - provide a metal to metal grip that bites the wire reinforcement
 - manufactured to have gripping teeth that deflect to insure the integrity of the crimp
 - manufactured to have a low profile design

<u>Crimp</u> (aka Permanent)

1-piece

2-piece





Fitting Types & Components

88 Series Barbed Nipple

81 Series Shell

<u>Crimp</u> (aka Permanent)

1-piece

2-piece

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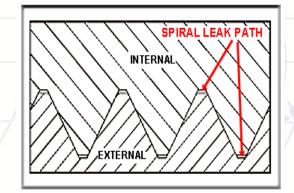
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THE TOTAL SOLUTION

Fitting Sealing Methods

5 Common Sealing Methods:

- Pipe Thread
 - mechanical metal to metal seal that grips and seals on the threads
 - limited reusability
 - not recommended for "Leak-Free" Technology
 - uses thread sealant or Teflon tape
 - least expensive
 - examples:
 - "01"
 - "13"





Fitting Sealing Methods

5 Common Sealing Methods:

- Flared
 - metal to metal seal by using the interface of the two angular surfaces
 - more reusability (compared to pipe threads)
 - dual seat
 - 37 degree (industrial standard)
 - 45 degree (automotive standard)
 - exceptions: -6 and -12
 - examples:
 - "06"

"08"



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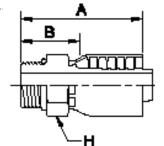
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Fitting Sealing Methods

5 Common Sealing Methods:

- SAE Straight Threads with O-Ring
 - creates a seal by compressing an o-ring into the mating female port
 - more reusability
 - recommended for "Leak Free" Technology
 - no need for thread sealar
 - example:
 - "05"
 - "0L"



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Fitting Sealing Methods

5 Common Sealing Methods:

"Seal-Lok" O-Ring Face Seal (ORFS)

- creates a seal by compressing the o-ring against the flat surface of the mating fitting
- "unlimited" remakeability
- recommended for "Leak Free" Technology
- example:
 - "JC"
 - "JS"
 - "J9"

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Fitting Sealing Methods

5 Common Sealing Methods:

- Flanges
 - creates a seal by compressing the o-ring against the port
 - recommended for "Leak Free" Technology
 - examples:
 - "4A"
 - "A" indicates straight
 - "6N"
 - "N" indicates 90 degree
 - "XF"
 - "F" indicates 45 degree

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Fitting Sealing Methods

5 Common Sealing Methods:

- Flanges (continued)
 - Code 61
 - plain flange head
 - High Pressure Code 61
 - vertical knurling
 - Code 62
 - horizontal groove
 - different bolt hole pattern & thicker flange
 - CAT
 - "XXXX" marking
 - Proprietary

3,000 - 5,000 psi

5,000 psi

6,000 psi (1"-2" hose)

Komatsu, Kobelco

Caterpillar Style



Fitting Nomenclature

10643-8-8

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Fitting Nomenclature 10643-8-8

Fitting Type:

Identifies whether the fitting is a crimp, a field attachable, or a Push-Lok hose fitting.

In this example, the "1" indicates that the fitting is a crimp style fitting.

- 1 = Crimp fitting
- 2 = Field Attachable fitting
- 3 = Push-Lok fitting

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Fitting Nomenclature 10643-8-8

Configuration Code:

Identifies the connection end configuration of the fitting.

In this example, the "06" indicates that the connection end is a Female JIC 37deg - Swivel - Straight

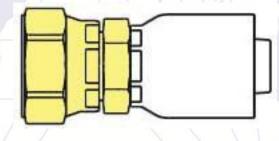
Other common configurations include:

01 = Male NPTF Pipe - Rigid - Straight

05 = Male SAE Straight Thread with O-Ring - Rigid - Straight

37 = Female JIC 37deg - Swivel - 45deg Elbow - Short Drop

JC = Female Seal-Lok - Swivel - Straight - Short



A complete listing of configuration codes can be found in the Appendix (pg. G-17) - "Standard Fitting Configurations by Description, End Code and Series".

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Fitting Nomenclature 10643-8-8

Series:

Identifies the fitting Series and subsequently which hoses the fitting can be used with.

In this example, the "43" indicates that the fitting is a 43 Series Parkrimp fitting.

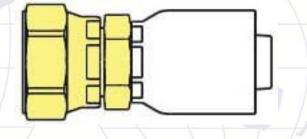
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Fitting Nomenclature 10643-8-8

Connection Size:

Connection size refers back to the connection type ("06") and identifies its size either in sixteenths of an inch or in metric thread mm.



In this example, the "-8" indicates that the "06" connection is 8/16", or 1/2".

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Fitting Nomenclature 10643-8-8

Hose Size:

Identifies the size of the hose (in sixteenths of an inch) to which the fitting will be coupled.



In this example, the "-8" indicates that the hose has an I.D. of 8/16", or 1/2".

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Fitting Nomenclature 10643-8-8

Material Code or other Suffix:

Could identify whether the fitting is made out of a material other than steel.

B = Brass

- C = Stainless Steel
- BA = Brass Nipple with Steel Nut and Socket (applies to 2-pc and 3-pc field attachable fittings)
- BS = Brass Nipple with Brass Nut and Steel Socket (applies to 2-pc and 3-pc field attachable fittings)

Could also identify whether the fitting has another feature:

-SM = Metric Hex

-VS = Vibra Seal thread sealant

In this example, there is not material code or suffix, so the fitting is known to be made of steel.



Fitting Nomenclature 20630-12-12

This 2-piece field attachable fitting is actually broken down into two components:

Nipple:

0630-12-12

Common nipple concept: interchange nipples on 1-wire braid and 2-wire braid

20642-12-12

Nipple:

0630-12-12

-/

Socket:

Socket:

20030-12

20042-12

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Fitting Nomenclature

0688-12-12 & 10081-12

This 2-piece crimp fitting is actually broken down into two components:

88 Series Nipple:

81 Series Shell:

0688-12-12

10081-12

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What's New with Fittings?

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What's New

Parker 26 Series fittings has A Complete Line of BRASS Products

Features:

- Use of Parkrimp family of crimpers
- One-piece permanently attached fitting
- Lightweight, economical alternative to stainless steel two-piece field attachable fittings
- Available in sizes 3/16" (-4) through 5/8" (-12)
- Outperforms steel fittings in salt-water applications





Are there any questions or comments?

Thank You !

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