



CAMLOCK FITTINGS TECHNICAL INFORMATION



CAMLOCK FITTINGS TECHNICAL INFORMATION

Pacific Fittings Camlock couplers are fully interchangeable with Dixon camlock fittings, PT Couplings, Banjo and OPW camlock fittings.

TECHNICAL INFORMATION

SPECIFICATIONS

Historically the standard for cam action couplings has been based on the US Military Specification MIL-C-27487 (Coupling Halves, Quick-Disconnect, Cam-Locking Type). The specification laid down the casting method, materials, dimensions, tolerances, pressure ratings and inspection procedures. The MIL-C-27487 specification guaranteed interchangeability of products. MIL-C-27487 has now been declared obsolete, and replaced by a new US Federal standard A-A-59326. All our metallic couplings are manufactured in accordance with the dimensions and tolerances of MIL-C-27487/ A-A-59326 specification and pressure-tested.

Please note all illustrations, descriptive matter, dimensions and weights are for guidance only and cannot be held as binding in any way. We reserve the right to change specifications and information included here without any prior notice. Although all information detailed here has been carefully compiled and thoroughly checked, no responsibility can be assumed for errors or omissions. Please contact us to be sure that the information you have is current.

WORKING PRESSURE – PSI (Also suitable for vacuum applications)

Material	1/2"	3/4" - 2"	2 1/2"	3"	4"	5" - 6"
Brass	150	250	150	125	100	75
Aluminium	150	250	150	125	100	75
Stainless Steel 316	150	250	225	200	100	100
Polypropylene	75	100	-	50	-	-

Note:

The working pressures given here are for ambient temperatures using elastomeric seals (see table above). Higher temperatures and/or PTFE seals will reduce the pressure rating of the coupling. In the case of polypropylene the maximum working temperature is 70°C (158°F). At this temperature, the working pressures above must be reduced by 40%.

CERTIFICATION

Full material certification is available if requested at the time of order.

THREADS

All threads BSP (BSPT).

END FITTINGS

Hose tail ends are double ribbed for metallic couplings and multi-serrated for polypropylene. For flanged or weld ends please call us to discuss.

MATERIALS AND SIZES

COUPLING BODY

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
Material									
Aluminium	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stainless Steel 316	✓	✓	✓	✓	✓	✓	-	✓	✓
Polypropylene	✓	✓	✓	✓	✓	✓	-	✓	✓

Aluminium camlock couplings are **gravity cast** (except for size 5" which are sand cast when supplied).

Stainless Steel 316 couplings are investment cast. These may be electro-polished for sanitary applications.

Polypropylene camlock fittings are manufactured from acid-resistant, glass-reinforced polypropylene.

Brass couplings are either sand cast or forged (currently not supplied).

HANDLES

Handle Material	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
Size									
Camlock material									
Aluminium	Br	Br	Br	Br	Br	Br	Br	Br	Br
Stainless Steel 316	SS	SS	SS	SS	SS	SS	-	SS	SS
Polypropylene	Br	Br	Br	Br	Br	Br	-	Br	Br

Br - Brass SS - Stainless Steel

Handles: These are stainless steel for SS316 & polypropylene cam and groove couplings. Brass for aluminium and polypropylene couplings.

Pull Rings: Fitted to all sizes. Stainless Steel for SS316 couplings. Brass for aluminium and polypropylene couplings.

GASKETS

Standard gasket materials for metallic couplings: Buna N. Standard for polypropylene: EPDM

OPERATING – HOW THE COUPLING WORKS



To connect, simply extend arms out and slip the camlock adapter smoothly into the camlock coupler. Then press the handles down with normal hand pressure.

Note:

1. Recess holds gaskets in place ready for positive sealing action.
2. Adaptor and coupler are designed to minimise turbulence in gases, fluids and abrasion from dry products at the point of connections.



All couplings are supplied with locking feature as standard. Safety clips may be inserted to lock handles to prevent disconnection during product transfer.

WHY CHOOSE A CAMLOCK COUPLER?

- Flexibility
- Safety
- Speed
- No Tools

Because of the great variety of suitable applications, camlock couplers are probably the world's most widely used quick connect coupler

INDUSTRY APPLICATIONS

Camlock couplers are applicable to most industries that use liquids, powders or gases. Examples of industries where cam and groove couplings are used include:

AGRICULTURE

Polypropylene camlock fittings are resistant to most acids and are ideal as camlock hose connectors on agricultural sprayers. Here they save time during refilling of tanks.

OIL DISTRIBUTION

In many countries, camlock couplings are the standard connection for hoses used in fuel delivery to service stations and domestic premises. No tools are required to make the connection. The risk of cross threading is also avoided.

CLEANING

Many industrial cleaning products work with hoses. Hoses with camlock fittings can easily be disconnected for storage to facilitate transport. Ease of disconnection facilitates removal in the event of a blockage occurring.

PUMP CONNECTIONS

Cam and groove fittings are often used at the inlet & outlet connections of pumps. An example would be a hose connect to a pump removing oil from the water's surface in an oil spill skimming system.

MILITARY

Per the US military spec MIL-C-27487 (now A-A-59326), camlock couplings are widely used by NATO forces throughout the world to facilitate rapid tactical deployment. Anodised aluminium cam and groove fittings can be supplied to the full spec.

PAINTS, INKS AND DYES

Camlock fittings assist in the manufacture of paints, inks & dyes which requires frequent hose changes to find the correct mix. The couplings can also tolerate the collection of coatings without detriment to the seal.

TYPICAL USAGE EXAMPLE: Petrochemical process plant

Solids: Aluminium cam & groove couplings can be used to join piping carrying solids, powders or pellets and can then easily be disconnected if blockages occur.

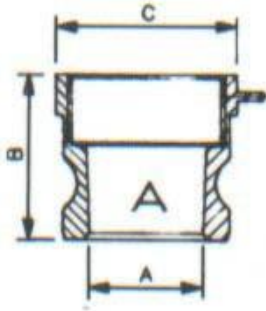
Process: Camlock couplings are particularly effective in the rapid changing of lines e.g. in mixing vessels. This saves time compared with flanged or threaded pipe fittings.

Storage: Camlock couplings are a standard option on IBC containers to allow rapid filling and emptying. Aggressive chemicals can also be handled. Stainless Steel and polypropylene camlock fittings are resistant to most acids and corrosive solvents.

Tablet presses: For hygienic applications, camlock couplings can be electro polished and fitted with food grade seals. All seals can easily be removed for cleaning.

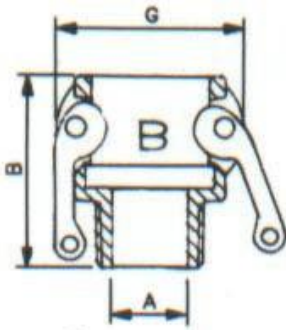
GENERAL DIMENSIONS

TYPE A



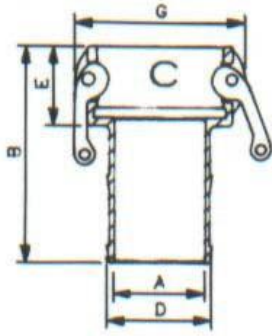
TYPE A											
Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"
Dim/ DIN	13	19	25	32	40	50	65	75	100	125	150
A	13	20	24	28	35	45	55	72	97	121	145
B	37	41	46	55	58	62	89	71	80	85	89
C	26	35	38	47	56	69	82	101	126	150	182

TYPE B



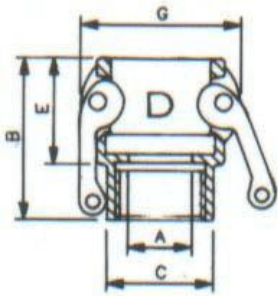
TYPE B											
Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"
Dim/ DIN	13	19	25	32	40	50	65	75	100	125	150
A	14	19	23	30	36	47	60	72	100	123	150
B	47	54	62	68	72	79	87	91	99	103	113
C	39	54	60	80	81	89	105	90	148	175	220

TYPE C



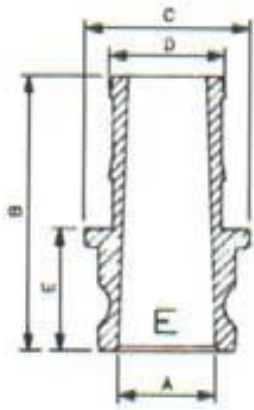
TYPE C											
Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"
Dim/ DIN	13	19	25	32	40	50	65	75	100	125	150
A	10	13	19	26	32	43	56	66	90	106	144
B	73	87	97	104	109	125	136	160	170	187	256
D	15	221	27	33	41	53	68	76	103	130	155
E	31	35	40	46	47	53	56	58	62	65	66
G	39	54	60	79	86	97	105	121	148	175	220

TYPE D



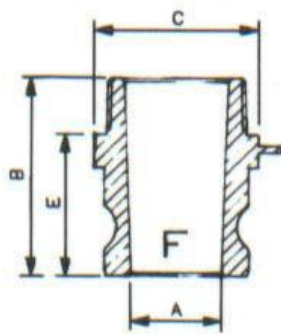
TYPE D											
Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"
Dim/ DIN	13	19	25	32	40	50	65	75	100	125	150
A	14	21	25	30	36	46	56	73	101	121	141
B	48	53	60	70	74	81	87	90	100	102	108
C	26	34	40	51	57	68	82	98	124	152	181
E	32	35	39	46	47	54	57	59	61	63	68
G	39	54	59	70	80	89	105	121	150	180	220

TYPE E



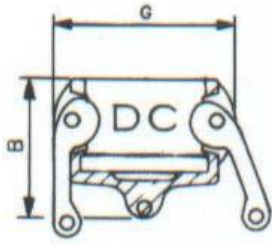
TYPE E											
Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"
Dim/ DIN	13	19	25	32	40	50	65	75	100	125	150
A	14	20	25	28	36	45	55	72	96	120	143
B	64	84	93	104	110	128	135	160	168	193	243
C	29	35	38	49	58	76	79	98	122	162	178
D	15	21	27	34	40	53	66	78	102	126	152
E	29	34	37	46	49	57	57	58	60	71	76

TYPE F



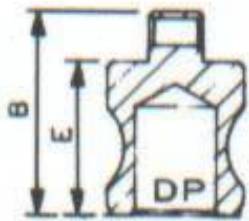
TYPE F											
Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"
Dim/ DIN	13	19	25	32	40	50	65	75	100	125	150
A	13	21	25	28	36	45	55	72	96	124	151
B	56	59	68	78	81	87	101	103	118	127	121
C	26	35	38	47	56	68	79	101	126	150	181
E	37	41	45	54	58	62	69	71	79	82	78

TYPE A



TYPE DC											
Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"
Dim/ DIN	13	19	25	32	40	50	65	75	100	125	150
B	43	46	52	60	63	70	73	78	90	105	113
G	39	54	59	70	80	89	105	121	150	180	220

TYPE DP



TYPE DP											
Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"
Dim/ DIN	13	19	25	32	40	50	65	75	100	125	150
B	36	38	46	53	55	63	68	66	70	75	88
E	27	25	34	41	41	49	53	52	54	53	90

NOTE: Dimensions are typical only. The precise dimension of parts will vary from material to material. If dimensions are critical to an application we strongly advise that you contact us for detailed information.

GENERAL INFORMATION

CASTING METHODS

Casting is the process where metal is heated until molten and then while in this state is poured into a mould. **Forging** is changing the shape of material already in the solid state through the application of heat and mechanical energy.

Gravity casting – Is a repeatable casting process used for non-ferrous alloy parts, typically aluminium, zinc and copper base alloys. The process differs from Pressure Die casting in that gravity rather than high pressure is used to fill the void. Here the process is not automated. Advantages – good dimensional accuracy/ smoother cast surface finish than pressure die and sand casting. Quality product. Gravity casting costs more than Pressure Die casting.

Pressure Die casting – this process is a way to produce high volumes of identical, low temperature metallic components with a great degree of precision and repeatability. Molten metals or alloys are injected under high force into a metal die. Automated process. Blowhole noticeable on dissection.

Investment casting – allows for un-machinable parts to be cast near final shape. Ideal for low volume production. Provides excellent dimensional accuracy.

Sand casting – uses non-reusable sand moulds to form metal castings. Versatile in the size of products it can accommodate. Can also create complex and detailed castings. Can be used to cast nearly any metal alloy. Inexpensive, easily recycled and can withstand extremely high temperatures.

GASKETS

Buna-N, also known as Nitrile rubber and NBR, is the most widely used elastomer for gaskets and seals. Its properties provide excellent resistance to oils, solvents, gasoline, and petroleum based fluids.

EPDM stands for ethylene propylene diene monomer (M-class) rubber. This is a specially designed synthetic rubber for water applications. An elastomer characterised by a wide range of applications. Supplied as standard in polypropylene camlocks since poly is used in agriculture with chemicals.

Viton, similar to EPDM in that it is an elastomer with high yield strength for outstanding durability. It is specifically formulated for use with hydrocarbons including corrosive liquids. Not recommend for storage of organic acids.

MATERIAL AND APPLICATION

Material	Cast style	Typical Application	Description
Aluminium	Die	General/ Agricultural /Industrial	The most common and economical of the Aluminium range. Used for general Air and Water applications.
	Gravity	Heavy duty industrial/ Petro-chemical industry/ Military	Heat-treated to increase strength. Reduces possibility of camlocks deforming or going oval when dropped. Fully weldable
Stainless Steel 316	Sand	Food & Beverage Industry/ Offshore/ Chemical Industry/ Marine	Fully weldable
Brass	Die	Offshore/ Mining/ Fire Brigade	
Polypropylene (black)		Agricultural Spraying/ Chemical Industry	Used extensively throughout the chemical and agricultural sector.
Nyglass (yellow)		Agricultural Spraying/ Chemical Industry	Alternative to Polypropylene. Glass filled nylon.

THREADS

BSP stands for British Standard Pipe and is common in Australia and the commonwealth countries. There are two types of BSP threads:

- BSPT (British Standard Pipe Taper). BSPT male threads seal against threads of BSPT female.
- BSPP (British Standard Pipe Parallel). BSPP male and females flat face require a suitable soft washer between faces to seal. For low working pressure.

NPT stands for National Pipe Thread This is an American standard thread.