



## CFBX Phosphor Bronze Hose Fittings – Crimp Style Including Crimp down Dimensions (CDD)

Crimp down diameters (CDD) are for Cortland phosphor bronze hose end fittings for the Cortland ranges of diving hoses.

**Fibroflex** pneumo, gas and hot water hoses (FDH series), light-weight collapse and recover (C/R) reclaim (FRH series) and non-collapse reclaim hoses (FXH series), all have a fibre braided final finish. These are typically used in both main services umbilicals and bell excursion umbilicals.

**Fibrolite** (FLT series) and **Fibrolite** (FLT series) pneumo, gas and hot water hoses have an extruded polyurethane final finish (Fibrolite with a thicker cover for greater robustness). These are typically used in surface demand / air dive applications.

Hose Details					Fitting Part No.	Ferrule O.D.	
Bore (ins)	Hose Type	Part Number	O.D. (mm)	MWP <sup>1</sup> (psi)		Pre crimp (mm)	Post crimp (CDD) (mm)
3/16"	Fibroflex	FDH03	9.70	1000	FPBSF/M/03-04JIC	15.70	13.80 ± 0.15
1/4"	Fibroflex	FDH04	11.90	1000	FPBSF/M/04-04JIC	19.00	15.85 ± 0.15
3/8"	Fibroflex	FDH06	18.25	1000	FPBSF/M/06-06JIC	25.40	21.80 ± 0.20
1/2"	Fibroflex	FDH08	22.70	1000	FPBSF/M/08-08JIC	30.15	25.60 ± 0.20
5/8"	Fibroflex	FDH10	27.10	1000	FPBSF/M/10-10JIC	33.35	28.80 ± 0.20
3/4"	Fibroflex	FDH12	32.05	1000	FPBSF/M/12-12JIC	39.60	33.00 ± 0.30
1"	Fibroflex	FDH16	39.40	1000	FPBSF/M/16-16JIC	50.00	43.70 ± 0.30
1 1/4"	Fibroflex	FDH20	44.00	1000	FPBSF/M/20-20JIC	54.60	48.20 ± 0.30
1/2"	Light weight Collapse & Recover Reclaim	FRH08 FRH08NB	22.25	100	FPBSF/M/08-08JIC	30.15	26.50 ± 0.30
5/8"		FRH10 FRH10NB	27.95	100	FPBSF/M/10-10JIC	33.35	29.80 ± 0.30
3/4"		FRH12	32.75	100	FPBSF/M/12-12JIC	39.60	33.20 ± 0.30
3/4"	Armoured Reclaim	FXH12	33.50	1000	FPBSF/M/12-12JIC	39.60	33.50 ± 0.30
3/4"	Armoured Reclaim	FXH12-PA	33.50	1000	FPBSF/M/12-12JIC	39.60	33.50 ± 0.30
3/4"	Armoured Reclaim (Hytrel Covered)	FXH-HCSL-12	32.10	1000	FPBSF/M/12-12JIC	39.60	34.40 ± 0.30
1/4"	Fibrolite	FLT04	11.50	400	FPBSF/M/04-04JIC	19.00	16.00 ± 0.20
3/8" <sup>2</sup>	Fibrolite	FLT06/R	17.50	500	FPBSF/M/06-06JIC	25.40	21.50 ± 0.20
1/2"	Fibrolite	FLT08	18.50	400	FPBSF/T/08-08JIC	25.40	22.00 ± 0.20
1/4"	Fibrolite	FBL04	12.50	500	FPBSF/M/04-04JIC	19.00	16.40 ± 0.20
3/8"	Fibrolite	FBL06	18.50	500	FPBSF/M/06-06JIC	25.40	23.00 ± 0.20
1/2"	Fibrolite	FBL08	21.50	500	FPBSF/M/08-08JIC	30.15	26.60 ± 0.20
5/8"	Fibrolite	FBL10	24.25	500	FPBSF/M/10-10JIC	33.35	26.10 ± 0.20
3/4"	Fibrolite	FBL12	30.60	500	FPBSF/M/12-12JIC	39.60	33.20 ± 0.20

<sup>1</sup> MWP: Maximum Working Pressure

<sup>2</sup> Prior to Aug 2004 FLT06/R was manufactured to a finished diameter of 16mm under the part number FLT06. Please contact the manufacturing site detailed below for crimp dimensions for this hose.

FDH Hoses – Hose types of a given bore use the same crimp data irrespective of suffix.

The final five characters of the fitting part number represent the size and type of termination.

**Manufacturing Site :**  
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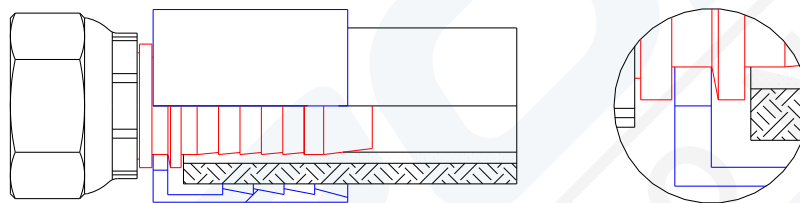
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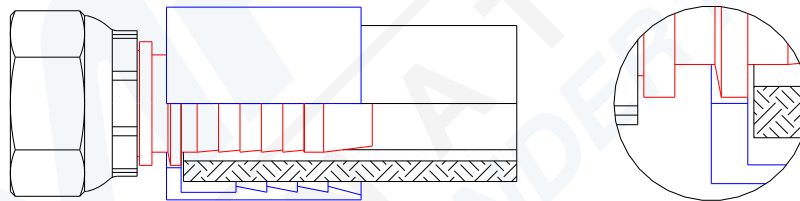
## Assembly Procedure for attaching CFBX (crimp style) phosphor bronze hose fittings:

- Cut the end of the hose square and remove any loose material. (See Notes for FXH hoses.)
- Push the ferrule over the hose until it touches the cut end. (See Notes for FRH hoses.)
- Insert the spigot into the hose until it touches the cut end. A compatible lubricant may be used if necessary (See Notes for FRH hoses).
- Pull the ferrule forward so that the shoulder at the front of the spigot is positioned as below. ( $\frac{3}{4}$ " fittings have front shoulders on the spigot that can pass into the ferrule pre-crimp so alignment as per the diagram below is critical.
- Crimp the full length of the ferrule using appropriately sized dies until the recommended diameter is achieved.

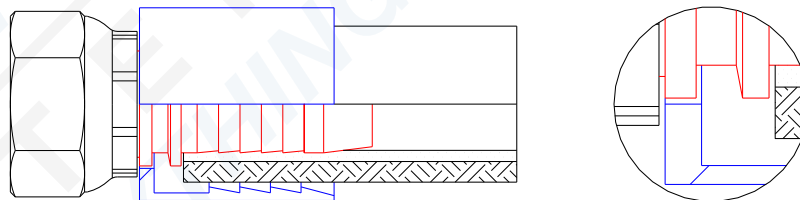
### Ferrule spigot alignment



**CORRECT** - Ferrule positioned over spigot groove.



**INCORRECT** - Ferrule clashes with spigot's rear shoulder.



**INCORRECT** - Ferrule clashes with spigot's front shoulder.

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**Notes:**

**FRH (light weight) Collapse and Recover reclaim type hoses (used in excursion umbilicals)**

For these hoses the ferrule should be pushed onto the hose until the cut end is aligned with the top of the last barb inside the ferrule. This is equivalent to pushing the ferrule onto the hose approx. 5mm less than for other hose types. It is advisable to mark the hose at the back of the ferrule as the ferrule may move when inserting the spigot.

**FXH Wire armoured reclaim type hoses (used in main bell umbilicals)**

When FXH hose is cut some of the internal steel wire may protrude from the wall of the hose. This must be cut off, using pliers or similar, before fitting the ferrule. No additional wire should be pulled out as this will reduce the collapse resistance. Taping the hose tightly prior to cutting will reduce the length of wire that springs out and this is recommended.

**Re-termination of FXH reclaim type hoses (used in main bell umbilicals)**

In the event of a reclaim hose requiring re-termination it must be "pin-pricked" to allow the escape of permeated gas. This must be done only at the surface end. Cortland procedure RG0015 gives full instructions on how best to do this. A copy of the procedure will be supplied on request.

**OXY / Lenz end fittings (9/16"-18 UNF thread)**

Hose Details					Fitting Part No. ‡	Ferrule O.D.	
Bore (ins)	Hose Type	Part Number	O.D. (mm)	MWP* (psi)		Pre swage (mm)	Post swage (SDD) (mm)
1/4"	Fibroflex	FDH04	11.90	1000	FPBSF/M/04-04OXY	19.00	15.85 ± 0.15
3/8"	Fibroflex	FDH06	18.25	1000	FPBSF/M/06-04OXY	25.4	21.8 ± 0.15
1/4"	Fibrolite	FBL04	12.50	500	FPBSF/M/04-04OXY	19.00	16.40 ± 0.20
3/8"	Fibrolite	FBL06	18.50	500	FPBSF/M/06-04OXY	25.40	23.00 ± 0.20
1/4"	Fibrolite	FLT04	11.50	400	FPBSF/M/04-04OXY	19.00	16.00 ± 0.20
3/8" <sup>2</sup>	Fibrolite	FLT06/R	17.5	500	FPBSF/M/06-04OXY	25.40	21.50 ± 0.20

<sup>2</sup> Prior to Aug 2004 FLT06/R was manufactured to a finished diameter of 16mm under the part number FLT06. Please contact the manufacturing site detailed below for crimp dimensions for this hose.

**Testing of CFBX Hose Assemblies**

Cortland recommends that all assemblies be tested after the hose fittings are attached. This should be carried out at a minimum of 1.5 x Maximum Working Pressure (MWP), held for 2 minutes, for a newly fitted hoses to check initial integrity and at 1.1 x MWP, held for 2 minutes, for regular maintenance tests thereafter (particularly prior to any new project or use). Potable water is the recommended test fluid and this should be purged from the hose after the pressure test and any moisture residue cleared with a foam pig.

The Max Working Pressure (MWP) is shown in the table on the first page of this document and is printed at intervals on each hose.

Cortland may test certain hose types at 2 x WP as a combination hose proof test/umbilical FAT.

**Disclaimer**

Neither Cortland or its employees will be liable for any loss or damage howsoever arising from, related to, or in connection with this procedure.

This is a comprehensive limitation of liability that applies to all damages of any kind, including (without limitation) compensatory, direct, indirect or consequential damages, loss of income or profit, loss of or damage to property and claims of third parties.

None of the above exclusions and limitations are intended in any way to exclude or limit liability for death or personal injury resulting from Cortland's negligence or that of its employees.

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