



HOSE & FITTINGS

Hose & Fittings	84
- Hose	84
- Fittings	85
- Tube Clamps	96

The product information and specifications within this catalogue should be viewed as a guide only and are subject to change without notice. Please refer to inside front cover for further details.



HOSE & FITTINGS

HOSE



Manuli Rubber Industries has established worldwide market recognition for superior performance, reliability and long lasting durable products. A comprehensive range of matched end fittings accompanies Manuli's wide range of hydraulic hose enabling the correct product to be specified for any application.

The hydraulic hose range is organised into the following categories:

- **UNIVERSAL HOSE RANGE** meeting and, in many cases, exceeding the main International Standards (SAE, DIN, EN and ISO)
- **EXTREME HOSE RANGE** offering products designed to guarantee superior performance that exceeds the standards in terms of extreme temperature resistance, super abrasion resistance, flame retardant covers, very high pressure, extreme weather and ozone resistance and superior flexibility and lightness.
- **SPECIAL HOSE RANGE** offering hose assemblies designed to satisfy demands of specific applications in heavy duty working conditions.



Manuli Rubber Industries is a global organisation active in the design, production and distribution of hose systems for conveying power in high/very high pressure hydraulic circuits and fluids in refrigeration units.

Manuli Rubber Industries' hydraulic hose range is universally recognised for its high performance, superior quality and long-lasting durability. The crimped fittings range is composed of about 2000 references meeting the main international standards (SAE, DIN, BSP, JIC, ORFS etc).

These products are used in industries such as construction and public works, underground and open pit mining, energy, logistics industrial machines, maintenance services, agriculture, forestry, water blasting and cleaning, and refrigeration.



Type	Code	Description
SINGLE BRAID	TRACTOR/1T	EN853 1SN - FRAS COVER 1/4" - 1/2"
	ROCKMASTER/1SN	ABRASION, WEATHER & HEAT RESISTANT - MSHA & FRAS APPROVALS
	HARVESTER/17	SAE 100R17 - COMPACT
	EQUATOR/1	1SN/R1AT - EXTREME TEMPERATURE
	PILOT	MANULI DESIGN - EXTREME LIGHTNESS
DOUBLE BRAID	TRACTOR/2T	EN853 2SN
	JACKMASTER	IJ100 HYDRAULIC JACK SPEC
	EQUATOR/2	2SN/R2AT - EXTREME TEMPERATURE
	ROCKMASTER/2SN	ABRASION, WEATHER & HEAT RESISTANT - MSHA & FRAS APPROVALS
	SHIELDMASTER/2SC MINE	EXTREME ABRASION RESISTANT - MSHA APPROVED
FOUR SPIRAL	GOLDENSPIR/12	SAE 100R12-EN856 R12
	ROCKMASTER/12-4SP-4SH	ABRASION, WEATHER & HEAT RESISTANT - MSHA & FRAS APPROVALS
	XTRAFLEX/4000 & 5000	EXTREME FLEXIBILITY, WEATHER & HEAT RESISTANT - MSHA & FRAS APPROVALS
	SHIELDMASTER/5000	EXTREME ABRASION RESISTANT, HEAT RESISTANT - MSHA APPROVED
SIX SPIRAL	GOLDENSPIR/13	SAE 100R13-EN856 R13
	ROCKMASTER/13 - 15	ABRASION, WEATHER & HEAT RESISTANT - MSHA & FRAS APPROVALS
	SHIELDMASTER/5000	EXTREME ABRASION RESISTANT, HEAT RESISTANT - MSHA APPROVED
	DIAMONDSPIR	VERY HIGH PRESSURE HEAT RESISTANT - MSHA APPROVED



Note: Also available, Low Pressure and Suction Hose - Pressure Washer Hose, Water Blast Hose and Thermoplastic Hoses.

FITTINGS



Fittings

The Manuli® crimped fittings and adaptor range meets the main international standards (SAE, DIN, BSP, JIC, ORFS etc). The whole fittings range features the new zinc plating treatment to guarantee an improved corrosion resistance and offer an environmentally friendly process.

The crimped fitting range is segmented as follows:

- **STANDARD TWO PIECE** is the universal solution for wire spiral and braided hoses, which offer a simple and cost effective fitting.
- **INTERLOCK TYPE** guarantees maximum reliability for very high pressure wire spiral hoses in heavy duty applications and is able to satisfy the most severe safety and service life requirements.
- **MULTICRIMP TYPE** one piece fittings to suit braided hoses and a non-skive solution for wire spiral hoses.
- **PUSHLOCK TYPE** an insert solution for low pressure hoses without the need for a swaged ferrule.
- **FIELD ATTACHABLE FITTINGS** are available through Berendsen Fluid Power in a wide range of styles and sizes to suit braided hoses in single or double wire braid.



Note: For a pictorial index of Manuli Fittings, please refer to page 87



BHA Adaptors

- Threads, BSP, NPT, JIC, UNO', Metric, SAE, ORFS, Flange
- All configurations, straight, compact and swept 45° and 90°, sockets, bulkhead, caps, plugs, reducing bushes, tee's, weld-on



BHA Quick Release Couplers

- Full range of quick release couplers
- Agricultural, ball and poppet type
- Industrial steel, brass and stainless couplers
- Non-spill flat face including HTMA interchange
- Protective dust plugs and caps



BHA Tube & Accessories

- Hydraulic tube, metric and imperial sizes
- Tube fittings, weld and profile ring type
- Tube clamps, single, double, light and heavy duty
- Heavy-duty hose clamps up to 250mm

For further information contact Berendsen Fluid Power.



BHA Connectors and Accessories (BHA C&A) was established in 2003 to provide a comprehensive range of hose and fittings along with low cost accessory products to Australian industry.

BHA stocks a comprehensive range of high pressure hydraulic hose, fittings, adaptors and accessories. A complete hose and fittings supply service is offered including the assembly of hoses and packaging into kit form. BHA C&A imports and takes to market premium high pressure hydraulics hose from Manuli, who are universally recognised for high-performance, superior quality and durability. BHA C&A's range of fittings and adaptors is sourced from manufacturers around the globe. These include swage fittings, field attachable fittings and adaptors.

BHA C&A is located in Sydney and offers fast efficient same day service on all stock items. It also supplies hose assembly machinery and associated tooling including assembly gauges.

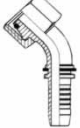
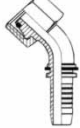






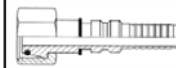

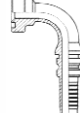
Pictorial Index of Fittings

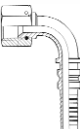
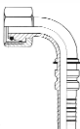
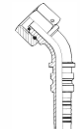


Swage Fittings	A19 BSPP Banjo Bolt - Use with SA18 Banjo	A69 Metric Banjo Bolt - Use with SA68 Banjo	SA10 BSPP Parallel Male Swage Tail	SA17 BSPP Female Swivel Swage Tail	SA18 BSPP Banjo Body Swage Tail - Use with A19 Bolt	SA21 BSPP Female Flat Face Swivel Swage Tail	
	SA22 BSP Male Taper Swage Tail	SA30 NPT Male Swage Tail	SA38 SAE Flange Code 61 Swage Tail	SA39 SAE Flange Code 62 Swage Tail	SA40 Komatsu® Flange	SA50 JIC Male Swage Tail	SA53 JIC Female Swivel Swage Tail
	SA58 Metric Light (DKL) Male Swage Tail	SA59 Metric Light (DKOL) Female Swivel Swage Tail	SA62 Metric Heavy (DKS) Male Swage Tail	SA63 Metric Heavy (DKOS) Female Swivel Swage Tail	SA68 Metric Banjo Body Swage Tail - Use A69 Bolt	SA70 'O'Ring Face Seal Male Swage Tail	SA71 'O'Ring Face Seal Female Swivel Swage Tail
	SA74 UNO Male Swage Tail	SA81 French Metric (GAZ) Male Swage Tail	SA82 French Metric (GAZ) Female Swivel Swage Tail	SA86 JIS Female - Suits Toyota Swage Tail	SA87 Metric Female - Suits Komatsu Swage Tail	SA90 Straight Hose Repair Connector Swage Tail	SA92 Karcher Washer Female Swage Tail
	SA96 Life Saver Hose Tail	SB17 BSPP Female Compact 90° Swage Tail	SB53 JIC Female Compact 90° Swage Tail	SG17 BSPP Female Swivel Swept 90° Swage Tail	SG38 SAE Flange Code 61 Swept 90° Swage Tail	SG39 SAE Flange Code 62 Swept 90° Swage Tail	SG53 JIC Female Swivel Swept 90° Swage Tail
	SG59 Metric Light (DKOL) Female Swept 90° Swage Tail	SG63 Metric Heavy (DKOS) Female Swept 90° Swage Tail	SG71 'O'Ring Face Seal Swept 90° Swage Tail	SJ17 BSPP Female Swivel Swept 45° Swage Tail	SJ38 SAE Flange Code 61 Swept 45° Swage Tail	SJ39 SAE Flange Code 62 Swept 45° Swage Tail	SJ53 JIC Female Swivel Swept 45° Swage Tail

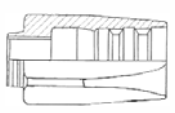
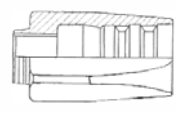
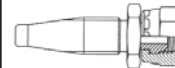
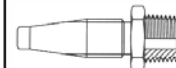
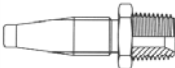
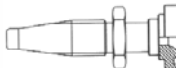









Manuli Pictorial Index of Fittings (Cont.)

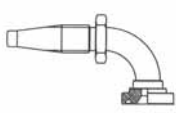
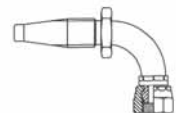
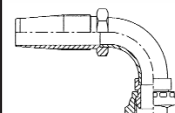
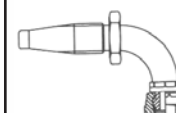
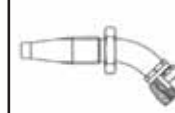
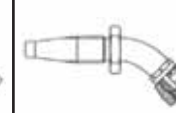
SJ59	SJ63	SJ71
Metric Light (DKOL) Female Swept 45° Swage Tail	Metric Heavy (DKOS) Female Swept 45° Swage Tail	'O'Ring Face Seal Swept 45° Swage Tail
		

Interlock	IA23	IA39	IA54	IA63	IG23	IG39
	BSPP Female 'O'Ring Interlock Swage Tail	SAE Flange Code 62 Interlock Swage Tail	JIC Female Interlock Swage Tail	Metric Heavy (DKOS) Female Interlock Swage Tail	BSPP Female 'O'Ring Swept 90° Interlock Swage Tail	SAE Flange Code 62 Swept 90° Interlock Swage Tail
						


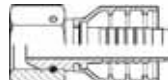

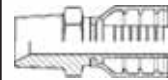
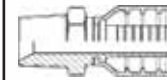

IG54	IG63	IJ23	IJ39	IJ54
JIC Female Swept 90° Interlock Swage Tail	Metric Heavy (DKOS) Female Swept 90° Interlock Swage Tail	BSPP Female 'O'Ring Swept 45° Interlock Swage Tail	SAE Flange Code 62 Swept 45° Interlock Swage Tail	JIC Female Swept 45° Interlock Swage Tail
				

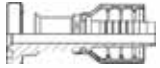

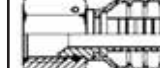




Field Attachable Fittings	FN1	FN2	FA17	FA22	FA30	FA38
	Body To Suit 1 Wire Non Skive Hose	Body To Suit 2 Wire Non Skive Hose	BSPP Female Swivel	BSPT Male	NPT Male	SAE Flange Code 61
						






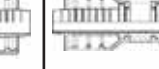

FA50	FA53	FA71	FA96	FB17	FB53	FG17
JIC Male	JIC Female Swivel	'O'Ring Face Seal Female	Life Saver Tail	BSPP Female Swivel Compact 90°	JIC Female Swivel Compact 90°	BSPP Female Swivel Swept 90°
						

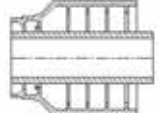
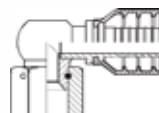
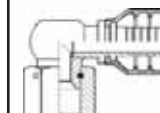


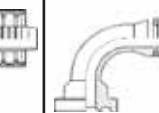
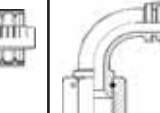
FG38	FG53	FG71	FH53	FJ17	FJ53
SAE Flange Code 61 Swept 90°	JIC Female Swivel Swept 90°	'O'Ring Face Seal Female Swept 90°	JIC Female Swivel Swept 90°	BSPP Female Swivel Swept 45°	JIC Female Swivel Swept 45°
					

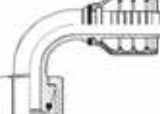
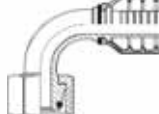



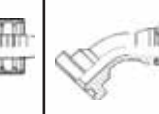






Multicrimp	SA10M	SA17M	SA18M	SA22M	SA30M	SA38M
	BSPB Parallel Male Multicrimp 	BSPB Female Multicrimp 	BSPB Banjo Body Multicrimp 	BSPB Male Taper Multicrimp 	NPT Male Multicrimp 	SAE Flange Code 61 Multicrimp 

SA39M	SA50M	SA53M	SA58M	SA59M	SA62M	SA63M
SAE Flange Code 62 Multicrimp 	JIC Male Multicrimp 	JIC Female Multicrimp 	Metric Light Male Multicrimp 	Metric Light (DKOL) Female Multicrimp 	Metric Heavy Male Multicrimp 	Metric Heavy (DKOS) Female Multicrimp 

SA68M	SA70M	SA71M	SA86M	SA87M	SA90M	SA92M
Metric Banjo Body Multicrimp 	'O'Ring Face Seal Male Multicrimp 	'O'Ring Face Seal Female Multicrimp 	JIC Female - Suits Toyota Multicrimp 	Metric Female - Suits Komatsu Multicrimp 	Hose Repair Connector Multicrimp 	Karcher Female Multicrimp 


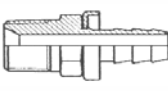
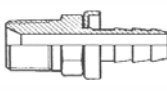



SA96M	SB17M	SB53M	SG17M	SG38M	SG39M	SG53M
Life Saver Multicrimp 	BSPB Female Compact 90° Multicrimp 	JIC Female Compact 90° Multicrimp 	BSPB Female Swept 90° Multicrimp 	SAE Flange Code 61 Swept 90° Multicrimp 	SAE Flange Code 62 Swept 90° Multicrimp 	JIC Female Swept 90° Multicrimp 

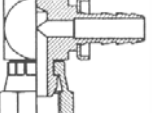
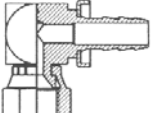
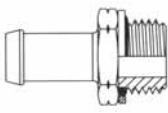
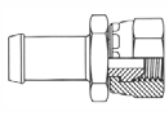
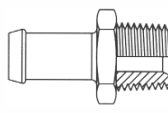
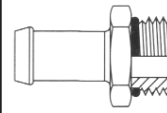
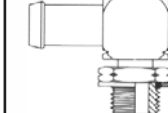
SG59M	SG63M	SG71M	SJ17M	SJ38M	SJ39M	SJ53M
Metric Female Light Swept 90° Multicrimp 	Metric Female Heavy Swept 90° Multicrimp 	'O'Ring Face Seal Swept 90° Multicrimp 	BSPB Female Swept 45° Multicrimp 	SAE Flange Code 61 Swept 45° Multicrimp 	SAE Flange Code 62 Swept 45° Multicrimp 	JIC Female Swept 45° Multicrimp 

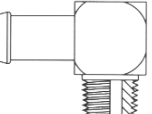
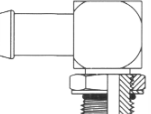
SJ59M	SJ63M	SJ71M
Metric Female Light Swept 45° Multicrimp 	Metric Female Heavy Swept 45° Multicrimp 	'O'Ring Face Seal Swept 45° Multicrimp 

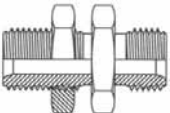
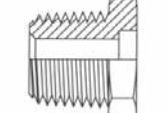
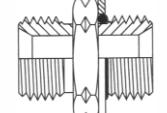
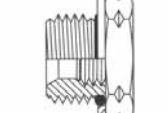
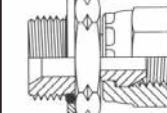
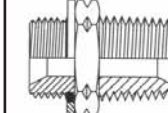


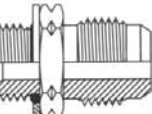
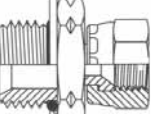
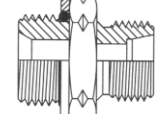
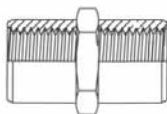
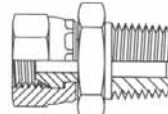
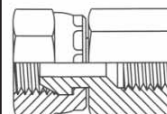
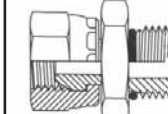
Manuli Pictorial Index of Fittings (Cont.)

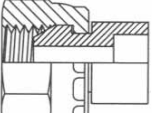
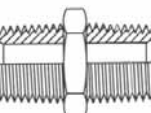
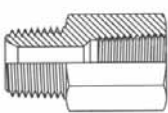
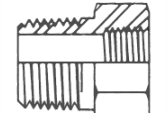
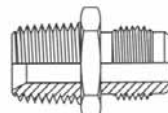
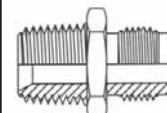
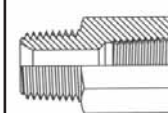
Low Pressure Hose Tails	PA17 BSPP Female Swivel Push Lock	PA22 BSPT Male Push Lock	PA30 Push Lock x NPT Male	PA45 SAE Female Swivel Push Lock	PA50 JIC Male Push Lock	PA53 JIC Female Swivel Push Lock
						

PB17 BSPP Female Swivel Push Lock Compact 90°	PB53 JIC Female Swivel Push Lock Compact 90°	LA11 Suction & Return Low Pressure Hose Tail x BSPP Male	LA17 Suction & Return Low Pressure Hose Tail x BSPP Female	LA22 Suction & Return Low Pressure Hose Tail x BSPT Male	LA74 Suction & Return Low Pressure Hose Tail x UNO	LB20 Suction & Return Low Pressure Hose Tail x BSPP Positional 90°
						

LB22 Suction & Return Low Pressure Hose Tail x BSPT Male Comp. 90°	LB76 Suction & Return Low Pressure Hose Tail x UNO Positional
	

Adaptors	A1025 BSPP Male x BSPP Bulkhead	A1096 BSPP Male Tube Weld	A1011 BSPP Male x BSPP 'O'Ring Boss	A1115 BSPP 'O'Ring Boss x BSPP Reducing Bush	A1117 BSPP 'O'Ring Boss x BSPP Female Swivel	A1122 BSPP 'O'Ring Boss x BSPT Male
						

A1150 BSPP 'O'Ring Boss x JIC Male	A1153 BSPP 'O'Ring Boss x JIC Female Swivel	A1162 BSPP 'O'Ring Boss x Metric Male Heavy	A1515 BSPP Fixed Female x BSPP Fixed Female	A1722 BSPP Female Swivel x BSPT Male	A1726 BSPP Female Swivel x BSPT Fixed Female	A1774 BSPP Female Swivel x UNO Male
						

A1796 BSPP Female Swivel Tube Weld	A2222 BSPT Male x BSPT Male	A2226 BSPT Male x BSPT Fixed Female Adaptor	A2226 BSPT Male x BSPT Fixed Female Reducing Bush	A2246 BSPT Male x SAE Female Swivel	A2250 BSPT Male x JIC Male	A2252 BSPT Male x JIC Fixed Female
						



A2253 BSPT Male x JIC Female Swivel	A2274 BSPT Male x UNO Male	A2296 BSPT Male Tube Weld	A2626 BSPT Fixed Female x BSPT Fixed Female	A2650 BSPT Fixed Female x JIC Male	A2674 BSPT Fixed Female x UNO	A2929 NPT Fixed Female x NPT Fixed Female

A2930 NPT Fixed Female x NPT Male	A3030 NPT Male x NPT Male	A3046 NPT Male x SAE Male	A3050 NPT Male x JIC Male	A3850 SAE Flange Code 61 x JIC Male	A3950 SAE Flange Code 62 x JIC Male	A4646 SAE Male x SAE Male

A5050 JIC Male x JIC Male	A5051 JIC Male x JIC Bulkhead	A5053 JIC Male x JIC Swivel - Female Tube Reducer	A5058 JIC Male x Metric Male Light	A5061 JIC Male x Metric Male Stud	A5070 JIC Male x 'O'Ring Face Seal (Male)	A5074 JIC Male x UNO

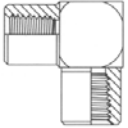
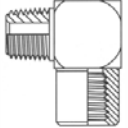
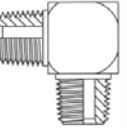
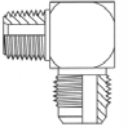
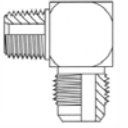
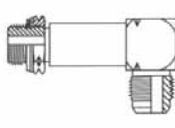
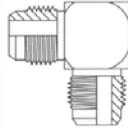
A5096 JIC Male Tube Weld	A5374 JIC Female Swivel x UNO	A5396 JIC Female Swivel x Tube Weld	A5674 JIC Male Extended x UNO	A7070 'O'Ring Face Seal Male x 'O'Ring Face Seal Male	A7071 ORFS Male x ORFS Female Swivel	A7074 'O'Ring Face Seal Male x UNO

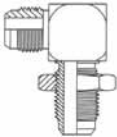
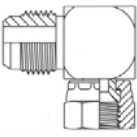
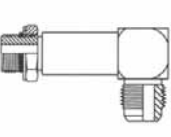
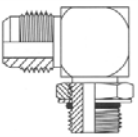
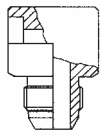
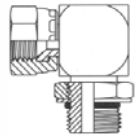
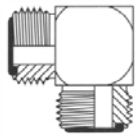
A7096 'O'Ring Face Seal Male x Tube Weld	A7174 ORFS Female Swivel x UNO	B1020 BSPP Male x BSPP Male Positional Compact 90°	B1720 BSPP Female Swivel x BSPP Male Positional Compact 90°	B1722 BSPP Female Swivel x BSPT Male Compact 90°	B1776 BSPP Female Swivel x UNO Positional Compact 90°	B2022 BSPP Male Positional x BSPT Male Compact 90°

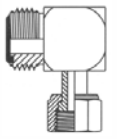
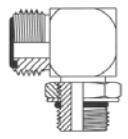
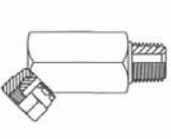
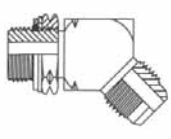
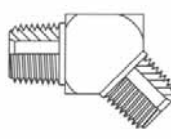
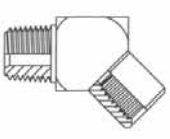
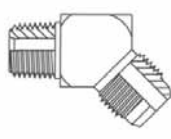
B2050 BSPP Male Positional x JIC Male Compact 90°	B2222 BSPT Male x BSPT Male Compact 90°	B2226 BSPT Male x BSPT Fixed Female Compact 90°	B2246 BSPT Male x SAE Male Compact 90°	B2250 BSPT Male x JIC Male Compact 90°	B2276 BSPT Male x UNO Positional Compact 90°	B2626 BSPT Fixed Female x BSPT Fixed Female Compact 90°

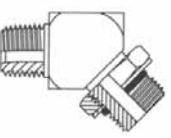
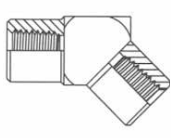
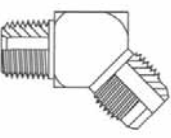
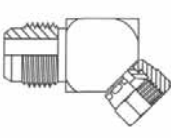
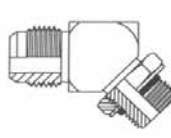
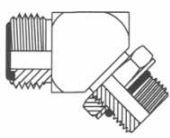
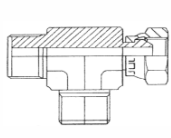


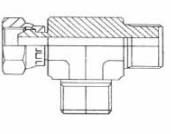
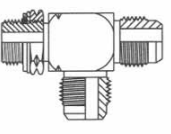
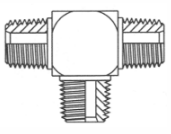
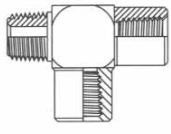
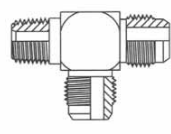
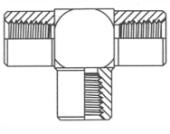
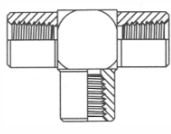
Manuli Pictorial Index of Fittings (Cont.)

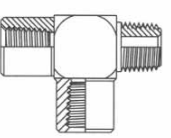
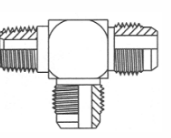
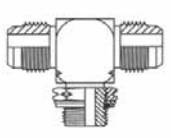
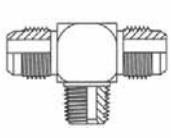
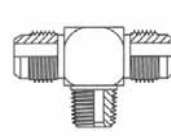
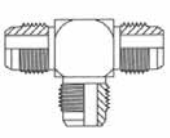
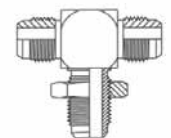
B2929 NPT Fixed Female x NPT Fixed Female Compact 90° 	B2930 NPT Fixed Female x NPT Male Compact 90° 	B3030 NPT Male x NPT Male Compact 90° 	B3046 NPT Male x SAE Male Compact 90° 	B3050 NPT Male x JIC Male Compact 90° 	B3750 BSPP Male Extended x JIC Male Compact 90° 	B5050 JIC Male x JIC Male Compact 90° 
--	--	--	--	---	--	--

B5051 JIC Male x JIC Bulkhead Compact 90° 	B5053 JIC Male x JIC Female Swivel Compact 90° 	B5075 JIC Male x UNO Extended Compact 90° 	B5076 JIC Male x UNO Compact 90° 	B5096 JIC Male x Tube Weld 90° 	B5376 JIC Female Swivel x UNO Positional Compact 90° 	B7070 'O'Ring Face Seal Male x 'O'Ring Face Seal Male Compact 90° 
--	---	--	---	---	---	--

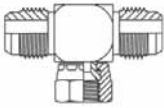
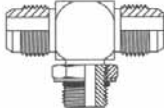
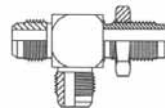
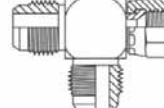
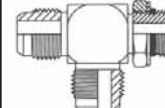
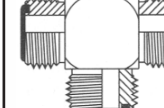
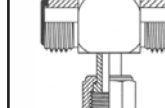
B7071 'O'Ring Face Seal Male x 'O'Ring Face Seal Female Compact 90° 	B7076 'O'Ring Face Seal Male x UNO Positional Compact 90° 	C1722 BSPP Female Swivel x BSPT Male Compact 45° 	C2050 BSPP Male Adj. x JIC Male Compact 45° 	C2222 BSPT Male x BSPT Male Compact 45° 	C2226 BSPT Male x BSPT Fixed Female Compact 45° 	C2250 BSPT Male x JIC Male Compact 45° 
--	--	---	--	---	--	---

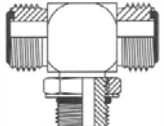
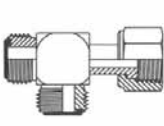
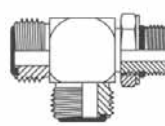
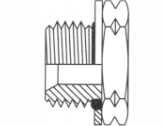
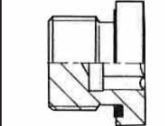
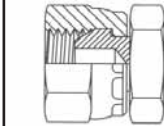
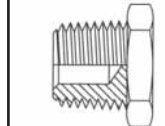
C2276 BSPT Male x UNO Positional Compact 45° 	C2626 BSPT Fixed Female x BSPT Fixed Female Compact 45° 	C3050 NPT Male x JIC Male Compact 45° 	C5053 JIC Male x JIC Female Swivel Compact 45° 	C5076 JIC Male x UNO Positional Compact 45° 	C7076 'O'Ring Face Seal Male x UNO Positional Compact 45° 	D101710 BSPP Male x BSPP Female Swivel x BSPP Male Tee 
--	--	--	---	---	--	---

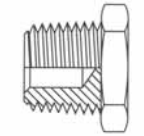
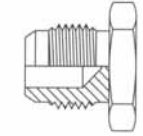
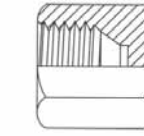
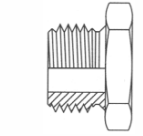
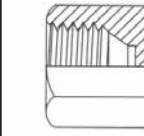
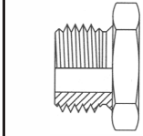
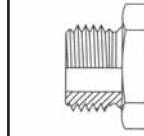
D172222 BSPP Female Swivel x BSPT Male x BSPT Male Tee 	D205050 BSPP Male Positional x JIC Male x JIC Male Tee 	D222222 BSPT Male x BSPT Male x BSPT Male Tee 	D222626 BSPT Male x BSPT Fixed Female x BSPT Fixed Female Tee 	D225050 BSPT Male x JIC Male x JIC Male Tee 	D262626 BSPT Fixed Female x BSPT Fixed Female x BSPT Fixed Female Tee 	D292929 NPT Fixed Female x NPT Fixed Female x NPT Fixed Female Tee 
--	---	--	--	---	--	---

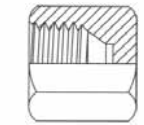
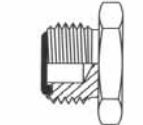
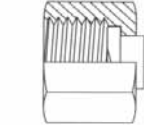
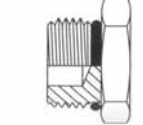
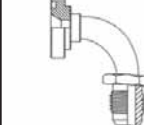
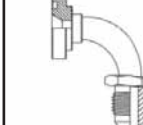
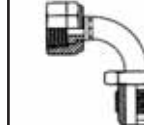
D293029 NPT Fixed Female x NPT Male x NPT Fixed Female Tee 	D305050 NPT Male x JIC Male x JIC Male Tee 	D505020 JIC Male x JIC Male x BSPP Male Positional Tee 	D505022 JIC Male x JIC Male x BSPT Male Tee 	D505030 JIC Male x JIC Male x NPT Male Tee 	D505050 JIC Male x JIC Male x JIC Male Tee 	D505051 JIC Male x JIC Male x JIC Bulkhead Tee 
--	---	---	--	--	---	---

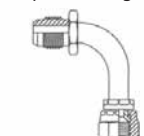
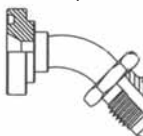
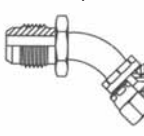
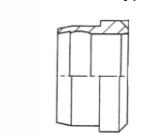
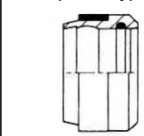
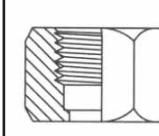
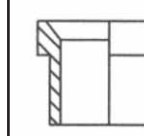


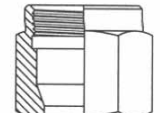
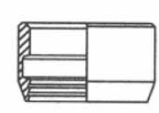
D505053 JIC Male x JIC Male x JIC Female Swivel Tee 	D505076 JIC Male x JIC Male x UNO Positional Tee 	D505150 JIC Male x JIC Bulkhead x JIC Male Tee 	D505350 JIC Male x JIC Female Swivel x JIC Male Tee 	D507650 JIC Male x UNO x JIC Male Tee 	D707070 ORFS Male x ORFS Male x ORFS Male Tee 	D707071 ORFS Male x ORFS Male x ORFS Female Tee 
--	---	---	--	---	--	--

D707076 ORFS Male x ORFS Male x UNO Tee 	D707170 ORFS Male x ORFS Female x ORFS Male Tee 	D707670 ORFS Male x UNO x ORFS Male Tee 	F11 BSPP 'O'Ring Boss Male Plug 	F11-IH BSPP Male Plug with Internal Hex 	F17 BSPP Female Swivel Cap 	F22 BSPT Male Plug 
--	--	--	---	--	--	---

F30 NPT Male Plug 	F50 JIC Male Plug 	F53 JIC Female Cap 	F58 Metric Light Male Plug 	F60 Metric Light Female Cap 	F61 Metric Male Stud Plug 	F62 Metric Heavy Male Plug 
--	--	---	--	--	---	--

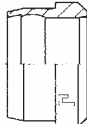
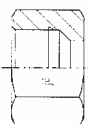
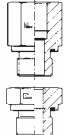
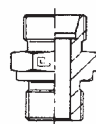
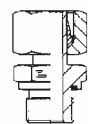
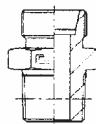
F64 Metric Heavy Female Cap 	F70 'O'Ring Face Seal Male Plug 	F71 'O'Ring Face Seal Female Cap 	F74 UNO Male Plug 	G3850 SAE Flange Code 61 x JIC Male Swept 90° 	G3950 SAE Flange Code 62 x JIC Male Swept 90° 	G5053 JIC Male x JIC Female Swept 90° 
---	---	--	--	---	--	--

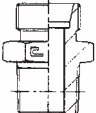
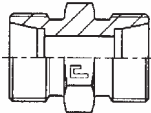
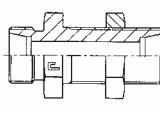

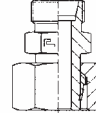
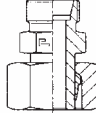
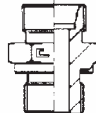
H5053 JIC Male x JIC Female Swept 90° Long Leg 	J3850 SAE Flange Code 61 x JIC Male Swept 45° 	J5053 JIC Male x JIC Female Swept 45° 	T44-B3 Tube Sleeve Metric B3 Standard Type 	T44-B4 Tube Sleeve Metric B4 Special Type 	T53 JIC Tube Nut Suits Imperial Tube - Use with T57 Sleeves 	T57 Tube Sleeves Suits Imperial Tube - Use with T53 Nuts 
---	--	--	---	---	--	---

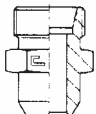
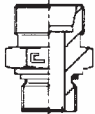
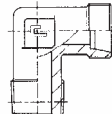
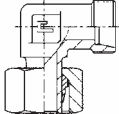
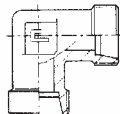
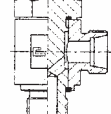
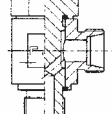
TV53 Versaflare Tube Nuts - Use with TV57 Sleeves 	TV57 Versaflare Sleeve - Use with TV53 Nuts 
--	---

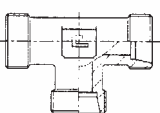
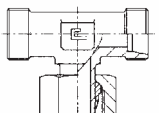
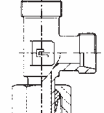
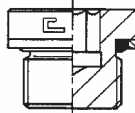
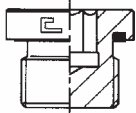
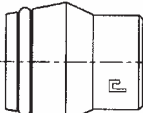
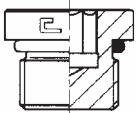


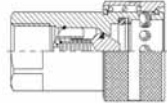
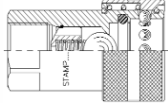
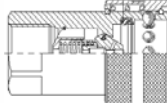
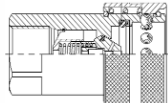
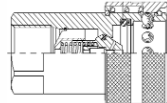
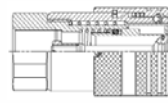
Manuli Pictorial Index of Fittings (Cont.)

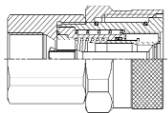

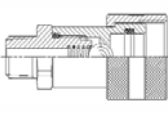

Metric Tube Fittings	SR/PR-L/S	M-L/S	A1115	GEV-WD	EGESD-WD	GEV-RK
	Cutting Rings 	Tube Nuts 	Reducing Thread Adaptors M/F (BSP Parallel) 	Straight Male Stud Coupling BSP Parallel - WD Seal 	Straight Stud Standpipe Adaptor BSPP c/w WD Seal 	Straight Male Stud Coupling (BSPT) 

GEV-NPT	GV/PGV-L/S	GSV-L/S	ESV-L/S	P-REDVD-L	P-REDVD-S	GEV-LM/SM
Straight Male Stud Coupling (NPT) 	Straight Tube Coupling 	Straight Bulkhead Coupling 	Welded Bulkhead Coupling 	Standpipe Tube Reducers (L Series) 	Standpipe Tube Reducers (S Series) 	Straight Male Stud Coupling - Metric Parallel WD Seal 

AS-L/S	GEV	WEV-LR/SR	EWV-L/S	WV-L/S	RSWV-R-WD	RSWV-LM/SM
Welded Boss 	Straight Male Stud Coupling (UNO) 	Male Stud Elbow (BSP Taper) 	Adjustable Elbow 	Elbow Coupling 	Banjo Coupling BSPP c/w Olive & Nut 	Banjo Coupling (Metric Parallel) c/w Olive & Nut 

T-L/S	ETV-L/S	EVL-L/S	F11-IH	F61-IH	F66-L/S	F74-IH
Tee Coupling 	Adjustable Barrel Tee 	Adjustable Branch Tee 	BSPP Port Plug Hexagon Socket Head 	Metric Port Plug Hexagon Socket Head 	Tube Blanking Plugs (Use with T42 Tube Nut) 	UNO Port Plug Hexagon Socket Head 

Quick Couplers	100 Series	150 Series	170 Series	180 Series	200 Series	300 Series
	100 Series ISO 7241-1 A Poppet 	150 Series Ball Check 	170 Series Poppet Check 	180 Series PBR Interchange 	200 Series ISO 7241-1 B Poppet 	300 Series ISO 16028 Flat Face 

400 Series	500 Series	600 Series	
400 Series Screw Together Flat Face 	500 Series TEMA Interchange 	600 Series Jack Coupling 	Caps & Plugs 



Accessories	BR	HSG	NHG	PHG	R10	R65
	Bend Restrictors - Black Vinyl	Spring Guard	Nylon Hose Guard	Plastic Hose Guard	Dowty Seal BSPP Thread	Dowty Seal Metric Thread

S38	S70	S74	Y38	Y3896	Y39	Y3996
'O'Ring to suit SAE Flange	'O'Ring to suit ORFS	'O'Ring to suit SAE O'Ring Boss	Blanking Flange Code 61	Flange Block Weld On Code 61	Blanking Flange Code 62	Flange Block Weld On Code 62

Z3808	Z3809	Z38	Z38K	Z38K	Z3908	Z3909
Code 61 Bolt Kit (UNC)	Code 61 Bolt Kit (Metric)	Code 61 Split Flange (Pair)	Code 61 Split Flange Kit c/w Bolts (UNC)	Code 61 Split Flange Kit c/w Bolts (Metric)	Code 62 Bolt Kit (UNC)	Code 62 Bolt Kit (Metric)

Z39	Z39K	Z39K	SCLD	SCLDM	SCHD	SCHDM
Code 62 Split Flange (Pair)	Code 62 Split Flange Kit c/w Bolts (UNC)	Code 62 Split Flange Kit c/w Bolts (Metric)	Single Tube Clamps Light Duty (UNC)	Single Tube Clamps Light Duty (Metric)	Single Tube Clamps Heavy Duty (UNC)	Single Tube Clamps Heavy Duty (Metric)

TCLD	TCLDM	TCS	TCSM	YA1538	YA1539	B3850
Twin Tube Clamps Light Duty (UNC)	Twin Tube Clamps Light Duty (Metric)	Twin Clamp Stacking Light Duty (UNC)	Twin Clamp Stacking Light Duty (Metric)	Flange Block to BSPP Female Code 61 (3000 psi)	Flange Block to BSPP Female Code 62 (6000 psi)	90° Flange Head Code 61 (3000 psi) x JIC Male

B3950	GBSM	PHC
90° Flange Head Code 62 (6000 psi) x JIC Male	Heavy Duty Hose Clamps	Heavy Duty P Clamps



TUBE CLAMPS

The practical mounting with innumerable combinations, the wide program range and the low fitting costs make 'PI.EFFE.CI' clamps a necessary element in pipe installations in every industry.

The tube clamps are available in many different materials and configurations suitable for a variety of applications.



Standard Series

- The Standard Series is available in polypropylene, self-extinguishing polyamide or aluminium, for pipes with outside diameter up to 1/4"(102mm).
- The Standard Series can be provided with different mounting systems: on weldable plate, on elongated plate, on double plate, on multiple plate, on mounting rail, in stacking and with upper plate. This series is recommended for oil-hydraulic installations up to 200 bar.

Refer to page 97 for the Standard Series Configuration Guide.



"CF" Series

- The "CF" Series is available in polypropylene or self-extinguishing polyamide for pipe pairs up to 1 1/2" (42.4mm).
- When using the "CF" Series it is recommended that you clamp a pair of pipes.
- Clamps for 2 pipes of different diameter can be provided on request. Fixing on the mounting rail or in stacking is possible.
- The "CF" Series has the same characteristics as the Standard Series.

Refer to page 99 for the "CF" Series Configuration Guide.



Heavyweight Series

- The Heavyweight Series is available in polypropylene or self-extinguishing polyamide for pipes up to 8" (324mm).
- The Heavyweight Series is recommended for complicated systems, for high pressure and considerable oil speed. The upper plates are also supplied in this series. High hexagon head bolts VACP are used in the stacked mounting.

Refer to page 100 for the Heavyweight Series Configuration Guide.



Standard Series - Configuration Guide

<p>Example Polypropylene clamp for 20mm outside diam. pipe and weld plate</p> <p>Required Components 1 x C4-20 PP (two halves) 2 x T.C.E.I. 2 x RP 1 x P4</p>	<p>Example Polyamide clamp for 3/4" gas inch outside diam. pipe, weld plate and upper plate</p> <p>Required Components 1 x C5-26,9 PA (two halves) 2 x VE5 2 x PS5 1 x P5</p>	<p>Example Polyamide clamp for 1 1/4" outside diam. O.D pipe, weld plate and bushing</p> <p>Required Components 1 x C6-32 PA (two halves) 2 x VE6 2 x B 1 x P6</p>	<p>Example Polypropylene clamp for 16mm outside diam. pipe and elongated plate</p> <p>Required Components 1 x C3-16 PP (two halves) 2 x T.C.E.I. 2 x RP 1 x PL3</p>
<p>Example The mounting of two overlapped pipes 1 x 35mm outside diam. 1 x 40mm outside diam. with polypropylene clamps and weld plate</p> <p>Required Components 2 x C6-35 PP 1 x C6-40 PP (two halves) 2 x T.C.E.I. 4 x RP 2 x VA6 2 x PB 1 x P6</p>	<p>Example The mounting of two overlapped pipes 1 x 2" gas inch outside diam. 1 x 73mm outside diam. with polyamide clamps, weld plate and upper plate</p> <p>Required Components 1 x C8-60, 3 x PA 1 x C8-73 PA (two halves) 2 x VE8 1 x PS8 2 x VA8 1 x PB 8 2 x RP 1 x P8</p>	<p>Example The mounting of two overlapped pipes 1 x 6mm outside diam. 1 x 10mm outside diam. with polypropylene clamps and weld plate</p> <p>Required Components 1 x C1-06 PP 1 x C1-10 PP (two halves) 1 x T.C.E.I. 2 x RP 1 x VA1 1 x PB 1 x P1</p>	<p>Example The mounting of polypropylene clamp for 102mm outside diam. pipe on a 28 x 14mm rail</p> <p>Required Components 1 x C9-102 PP (two halves) 2 x T.C.E.I. 2 x RP 2 x AG 2 x DF 2 x BB 28 x 14</p>

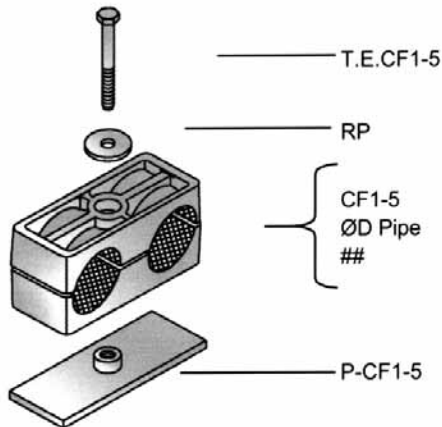


Standard Series - Configuration Guide (Cont.)

<p>*Refer to note</p> <p>Example Aluminium clamp for 25mm outside diam. pipe and weld plate</p> <p>Required Components 1 x AC4-25 (two halves) 2 x T.C.E.I. 2 x RP 1 x P4</p>	<p>*Refer to note</p> <p>Example Aluminium clamp for 50mm outside diam. pipe weld plate and upper plate</p> <p>Required Components 1 x AC7-50 (two halves) 2 x VE7 1 x PS7 1 x P7</p>	<p>Example The mounting of two pipes placed side by side 1 x 32mm outside diam. 1 x 42mm outside diam. with polypropylene clamps</p> <p>Required Components 1 x C6-32 PP 1 x C6-42 PP (two halves) 4 x T.C.E.I. 4 x RP 1 x PD6</p>	
<p>Example Polypropylene clamp for 12mm outside diam. pipe and weld plate</p> <p>Required Components 1 x C1-12 PP (two halves) 1 x T.C.E.I. 1 x RP 1 x P1</p>	<p>Example Polyamide clamp for 8mm outside diam. pipe and elongated plate</p> <p>Required Components 1 x C1-08 PA (two halves) 1 x T.C.E.I. 1 x RP 1 x PL1</p>	<p>Example Polyamide clamp for 3/8" outside diam. pipe upper plate and elongated plate</p> <p>Required Components 1 x C1-9, 52 PA (two halves) 1 x VE1 1 x PS1 1 x PL1</p>	<p>Example The mounting of two pipes placed side by side 1 x 6mm outside diam. 1 x 12mm with polyamide clamps</p> <p>Required Components 1 x C9-06 PA Nº1 C1-12 PA (two halves) 1 x VE1 1 x PS1 1 x PD1 1 x T.C.E.I. 1 x RP</p>
<p>Example The mounting of five pipes placed side by side 2 x 40mm outside diam. 2 x 38mm 1 x 45mm with polyamide clamps and one upper plate</p> <p>Required Components 2 x C6-40 PA N.2 C6-38 PA 1 x C6-45 PA (two halves) 2 x VE6 1 x PS6 1 x PM6 8 x T.C.E.I. 8 x RP</p>		<p>Note: *Aluminium clamp from 6mm (AC1) to 54mm (AC7) can be mounted with every standard series accessory</p>	



"CF" Series - Configuration Guide

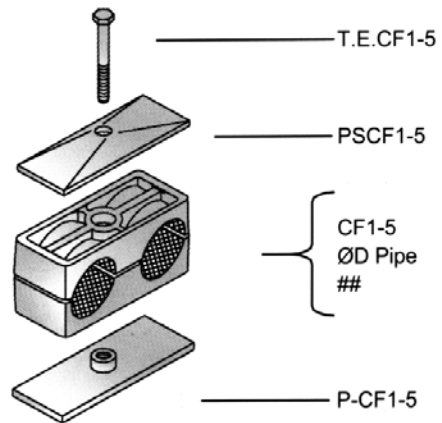


Example

Polypropylene clamp for the mounting of two coupled pipes with 20mm outside diam. flat washer and weld plate

Required Components

- 1 x CF3-20-20-PP (two halves)
- 1 x T.E.CF3
- 1 x P-CF3
- 1 x RP-CF3

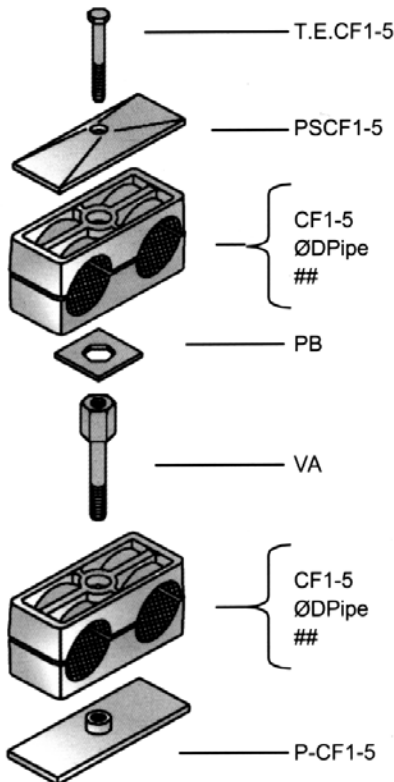


Example

Polyamide clamp for the mounting of two coupled pipes with 30mm outside diam. upper plate and weld plate

Required Components

- 1 x CF4-30-30-PA (two halves)
- 1 x T.E.CF4
- 1 x P-CF4
- 1 x PS-CF4

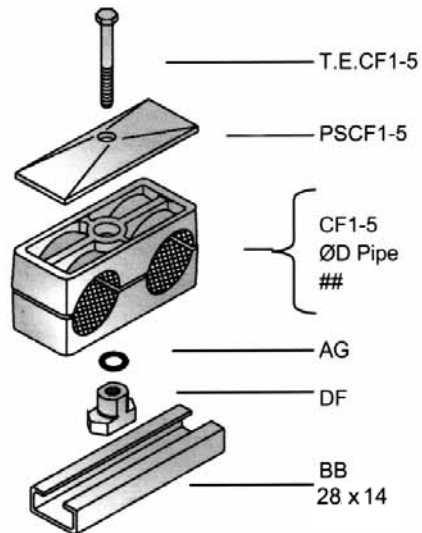


Example

The mounting of two pairs of stacked pipes. Two of these pipes with 20mm outside diam. the others with 23mm outside diam. Mounting with polypropylene clamps and upper plate

Required Components

- | | | |
|-------------------------------|------------|------------|
| 1 x CF3-20-20-PP (two halves) | 1 x VA-CF3 | |
| 1 x CF3-23-23-PP (two halves) | 1 x P-CF3 | |
| 1 x T.E.CF3 | 1 x PB-CF3 | 1 x PS-CF3 |



Example

The mounting of polyamide clamp for a pair of pipes with 15mm outside diam. on 28 x 14 rail

Required Components

- 1 x CF2-15-15-PA (two halves)
- 1 x T.E.CF2
- 2 x BB 28 x 14
- 1 x AG
- 1 x PS-CF2
- 1 x DF-M08



Heavyweight Series - Configuration Guide

T.C.E.I. CP4

CP1-9
ØD Pipe
##

P CP1-9

Example
The mounting of a 56mm outside diam. pipe polypropylene clamp without upper plate

Required Components
1 x CP4-56 PP (two halves)
2 x T.C.E.I. CP4
1 x P CP4

T.E. CP7

PS CP7

CP1-9
ØD Pipe
##

P CP7

Example
The mounting of a 150mm outside diam. pipe, polyamide clamp with upper plate

Required Components
1 x CP7-150 PA (two halves)
2 x T.E. CP7
1 x P CP7
1 x PS CP7

T.E. CP3

PS CP3

AL CP3-42.4
ØD Pipe
##

AGP

DFP

BB P

Example
The mounting of a 1 1/4" gas inch pipe with aluminium clamp, upper plate and rail

Required Components
1 x AL CP3-42.4 (two halves) 2 x AGP
2 x T.E. CP3 2 x DF PM10
1 x PS CP3 2 x BB P

T.E.L. CP3

PS CP3

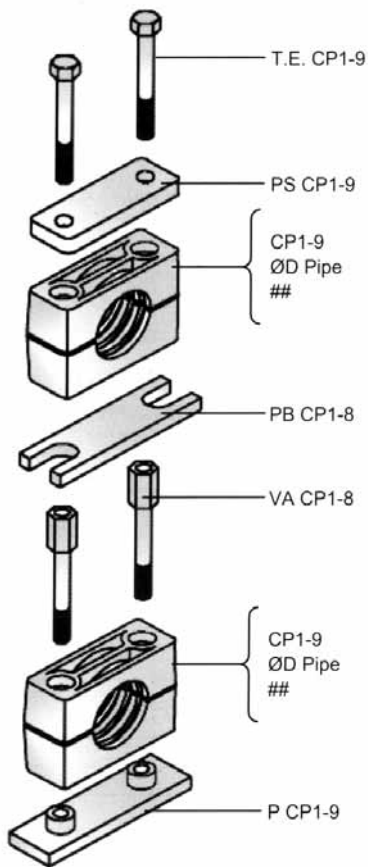
CP1-9
ØD Pipe
##

CP1-9
ØD Pipe
##

PL CP3

Example
The mounting of two stacked pipes 1 x 30mm outside diam. 1 x 40mm outside diam. polypropylene clamps without locking plate

Required Components
1 x CF3-30 PP (two halves) 1 x PS CP3
1 x CF3-40 PP (two halves) 1 x PL CP3
2 x T.E.L. CP3

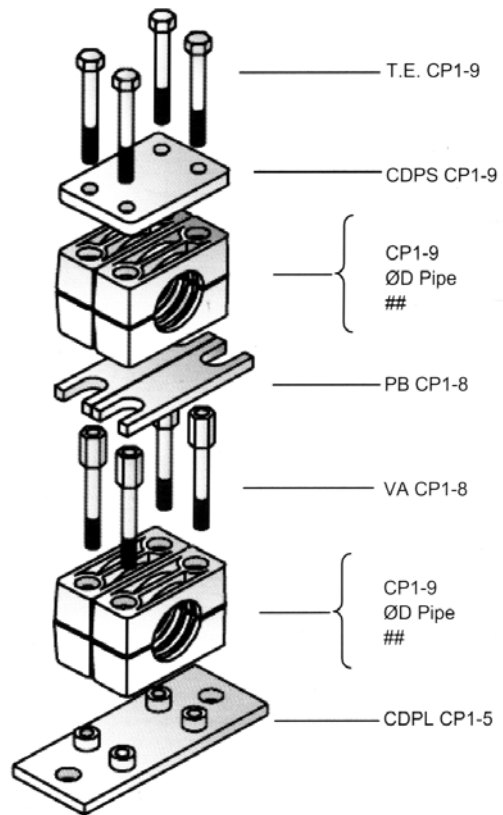


Example

The mounting of two stacked pipes - 1 x 100mm outside diam. 1 x 108mm outside diam. polypropylene clamps and locking plate

Required Components

- | | | |
|-----------------------------|------------|------------|
| 1 x CP6-100 PP (two halves) | 2 x VA CP6 | 1 x PS CP6 |
| 1 x CP6-108 PP (two halves) | 1 x PB CP6 | |
| 1 x T.E CP6 | 1 x P CP6 | |

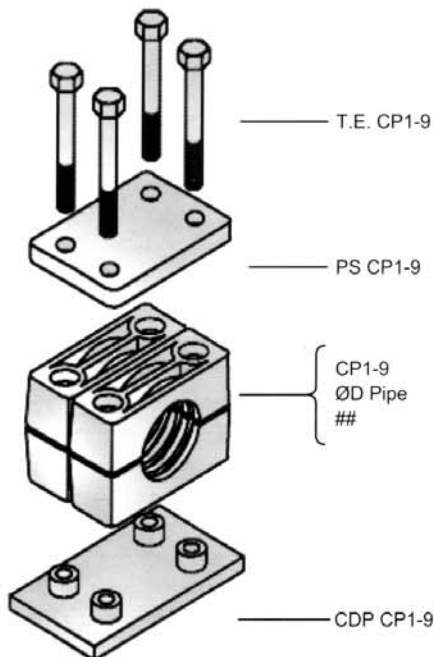


Example

The mounting of two stacked pipes - 1 x 8" gas inch outside diam. 1 x 6" gas inch outside diam. polyamide double clamps and locking plate

Required Components

- | | | |
|----------------------------|--------------|--------------|
| 2 x CP4-60 PA (two halves) | 4 x VA CP4 | 1 x CDPL CP4 |
| 2 x CP4-55 PA (two halves) | 2 x PB CP4 | |
| 4 x T.E CP4 | 1 x CDPS CP4 | |



Example

The mounting of a 146mm outside diam. pipe, polyamide double clamp and upper plate

Required Components

- | |
|-----------------------------|
| 2 x CP7-146 PA (two halves) |
| 4 x T.E. CP7 |
| 1 x CDPS CP7 |
| 1 x CDP CP7 |