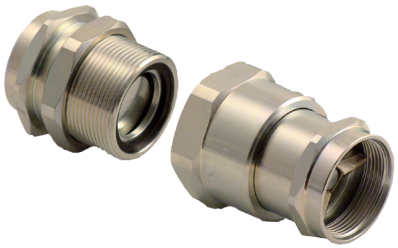
FASTER®
think faster

RF SERIES

FEATURES

- Connection system: screw-on
- Disconnection system: screw-on
- Shut-off system: flat valve
- Connectability: both female and male couplings under residual pressure
- Disconnection under pressure: allowed
- Interchangeability: worldwide market

- Screw-on latching system
- Standard seals in Neoprene or HNBR (Hydrogenated NBR)
- Arranged for bulkhead mounting
- Wide range of brazed and threaded adaptors
- Special versions available on request
- UL listed: File N° SA13163
- UL marking on request



TECHNICAL DATA

Size ❖		DN Nominal diameter		Minimum burst pressure					
				Connected		Male		Female	
		mm	inc.	MPa	PSI	MPa	PSI	MPa	PSI
1/4"	04	6.5	0.25	100	14500	53	7685	10,5	1523
3/8"	06	9.5	0.38	70	10150	34	3480	19	2755
1/2"	08	12.7	0.5	55	7975	55	7975	15	2175
3/4"	12	19	0.75	43	6235	43	6235	15	2175
1"	16	25.4	1	37	5365	12	1740	15	2175
1-1/2"	24	38	1.5	30	4350	16	2320	11,5	1668

Air inclusion and fluid loss	Maximum leakage rate **	Vacuum rating		Connection sleeve torque
cc max.	g/year	mmHg	incHg	Nm
0,02	1	2	0,08	8^{+2}_{-0}
0,05	1	2	0,08	30^{+5}_{-0}
0,1	1	2	0,08	50^{+5}_{-0}
0,1	1	2	0,08	60^{+5}_{-0}
0,2	1	2	0,08	80^{+10}_{-0}
0,2	1	2*	0,08*	80^{+10}_{-0}

** R22 equivalent refrigerant, at operating range, both connected and disconnected.

Size ❖		DN Nominal Diameter		Maximum Working Pressure*					
				Connected		Male		Female	
		mm	inc.	MPa	PSI	MPa	PSI	MPa	PSI
1/4"	04	6.5	0.25	33	4785	17,5	2538	3,5	508
3/8"	06	9.5	0.38	23,3	3379	11,3	1160	6	870
1/2"	08	12.7	0.5	18,3	2654	18,3	2654	5	725
3/4"	12	19	0.75	14,3	2074	14,3	2074	5	725
1"	16	25.4	1	12,3	1784	4	580	5	725
1-1/2"	24	38	1.5	10	1450	5,3	769	3,8	551

* Safety Factor = 1:3 - For static pressures use safety factor 1:2

SEALS COMPATIBILITY:

Refrigerants	Lubricants	Suggested seals
R22	AB (Alkyl Benzene) MO (Mineral Oil) POE (Polyol Ester)	Viton Neoprene Neoprene
R134a	MO (Mineral Oil) PAG (Polyalkylene Glycol) PAO (Polyalpha Olefin) POE (Polyol Ester)	HNBR - Neoprene HNBR - Neoprene HNBR - Neoprene HNBR - Neoprene
R404A	AB (Alkyl Benzene) POE (Polyol Ester)	Viton HNBR - Neoprene
R407C	AB (Alkyl Benzene) MO (Mineral Oil) PAO (Polyalpha Olefin) POE (Polyol Ester) PVE (Polyvinyl Ether)	Viton HNBR - Neoprene HNBR - Neoprene HNBR - Neoprene HNBR - Neoprene
R410A	PAO (Polyalpha Olefin) POE (Polyol Ester)	HNBR - Neoprene HNBR - Neoprene
R507	POE (Polyol Ester)	HNBR - Neoprene

MATERIALS:

- Male and female in zinc plated steel with CrIII passivation
- Male valves in zinc plated steel with Cr III passivation
- Female slider in brass with vulcanized rubber
- Springs in stainless steel
- Guidevalves in brass
- Seals: standard in Neoprene or HNBR
  On request: EPDM, Viton or other seals.
- Working temperatures:
  With Neoprene seals from -40°C (-40°F) to +120°C (248°F).
  With HNBR seals from -25°C (-13°F) to +140°C (+284°F).
  Temperatures refer to theorical working conditions in laboratory.

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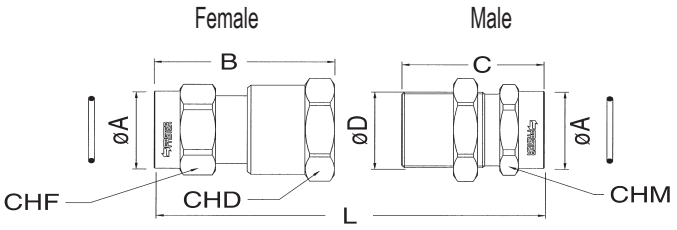
AVAILABLE ITEMS



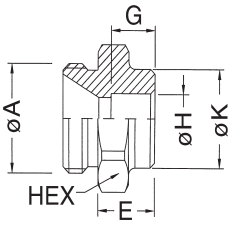
Version without adaptor

VERSION WITHOUT ADAPTOR:

❖	Female	Male	Ø A	Seals material	B		C		Ø D mm	CHD		L		CHF		CHM	
					mm	inc.	mm	inc.		mm	inc.	mm	inc.	mm	inc.	mm	inc.
04	RF 04 F N	RF 04 M N	1/2" - 20 UNF	Neoprene	28	1,10	27,5	1,08	5/8" - 18 UNF	19	0,75	48,5	1,91	16	0,63	19	0,75
	RF 04 F H	RF 04 M H	1/2" - 20 UNF	HNBR	28	1,10	27,5	1,08	5/8" - 18 UNF	19	0,75	48,5	1,91	16	0,63	19	0,75
	RF 04 F E	RF 04 M E	1/2" - 20 UNF	EPDM	28	1,10	27,5	1,08	5/8" - 18 UNF	19	0,75	48,5	1,91	16	0,63	19	0,75
	RF 04 F V	RF 04 M V	1/2" - 20 UNF	Viton	28	1,10	27,5	1,08	5/8" - 18 UNF	19	0,75	48,5	1,91	16	0,63	19	0,75
06	RF 06 F N	RF 06 M N	M18x1,5	Neoprene	34,8	1,37	27	1,06	M20x1,5	24	0,94	53	2,09	22	0,87	22	0,87
	RF 06 F H	RF 06 M H	M18x1,5	HNBR	34,8	1,37	27	1,06	M20x1,5	24	0,94	53	2,09	22	0,87	22	0,87
	RF 06 F E	RF 06 M E	M18x1,5	EPDM	34,8	1,37	27	1,06	M20x1,5	24	0,94	53	2,09	22	0,87	22	0,87
	RF 06 F V	RF 06 M V	M18x1,5	Viton	34,8	1,37	27	1,06	M20x1,5	24	0,94	53	2,09	22	0,87	22	0,87
08	RF 08 F N	RF 08 M N	7/8" - 20 UNEF	Neoprene	46,5	1,83	38,5	1,52	1" - 20 UNEF	30	1,18	76,5	3,01	27	1,06	27	1,06
	RF 08 F H	RF 08 M H	7/8" - 20 UNEF	HNBR	46,5	1,83	38,5	1,52	1" - 20 UNEF	30	1,18	76,5	3,01	27	1,06	27	1,06
	RF 08 F E	RF 08 M E	7/8" - 20 UNEF	EPDM	46,5	1,83	38,5	1,52	1" - 20 UNEF	30	1,18	76,5	3,01	27	1,06	27	1,06
	RF 08 F V	RF 08 M V	7/8" - 20 UNEF	Viton	46,5	1,83	38,5	1,52	1" - 20 UNEF	30	1,18	76,5	3,01	27	1,06	27	1,06
12	RF 12 F N	RF 12 M N	1-1/4" - 18 UNEF	Neoprene	55,5	2,19	44	1,73	1-7/16" - 16 UN	41	1,61	85,5	3,37	36	1,42	41	1,61
	RF 12 F H	RF 12 M H	1-1/4" - 18 UNEF	HNBR	55,5	2,19	44	1,73	1-7/16" - 16 UN	41	1,61	85,5	3,37	36	1,42	41	1,61
	RF 12 F E	RF 12 M E	1-1/4" - 18 UNEF	EPDM	55,5	2,19	44	1,73	1-7/16" - 16 UN	41	1,61	85,5	3,37	36	1,42	41	1,61
	RF 12 F V	RF 12 M V	1-1/4" - 18 UNEF	Viton	55,5	2,19	44	1,73	1-7/16" - 16 UN	41	1,61	85,5	3,37	36	1,42	41	1,61
16	RF 16 F N	RF 16 M N	1-19/32" - 20 UN	Neoprene	61,5	2,42	46,5	1,83	1-3/4" - 16 UN	50	1,97	92	3,62	46	1,81	50	1,97
	RF 16 F H	RF 16 M H	1-19/32" - 20 UN	HNBR	61,5	2,42	46,5	1,83	1-3/4" - 16 UN	50	1,97	92	3,62	46	1,81	50	1,97
	RF 16 F E	RF 16 M E	1-19/32" - 20 UN	EPDM	61,5	2,42	46,5	1,83	1-3/4" - 16 UN	50	1,97	92	3,62	46	1,81	50	1,97
	RF 16 F V	RF 16 M V	1-19/32" - 20 UN	Viton	61,5	2,42	46,5	1,83	1-3/4" - 16 UN	50	1,97	92	3,62	46	1,81	50	1,97
24	RF 24 F N	RF 24 M N	M61x1.5	Neoprene	96	3,78	70	2,76	M68x2	80	3,15	150	5,91	70	2,76	70	2,76
	RF 24 F H	RF 24 M H	M61x1.5	HNBR	96	3,78	70	2,76	M68x2	80	3,15	150	5,91	70	2,76	70	2,76
	RF 24 F E	RF 24 M E	M61x1.5	EPDM	96	3,78	70	2,76	M68x2	80	3,15	150	5,91	70	2,76	70	2,76
	RF 24 F V	RF 24 M V	M61x1.5	Viton	96	3,78	70	2,76	M68x2	80	3,15	150	5,91	70	2,76	70	2,76

❖ Size

BRAZE TUBING ADAPTOR SUITABLE FOR RF SERIES



Braze tubing adaptor

BRAZE TUBING ADAPTOR REFERENCES:

❖	Adaptor Code	Ø A	Adaptor Material	Ø H		Ø K		E		G		HEX		Adaptor tightening torque
				mm	inc.	mm	inc.	mm	inc.	mm	inc.	mm	inc.	Nm
04	RF 04 TS065	1/2" - 20 UNF	Brass	6,5	0,26	16	0,63	12,4	0,49	8	0,31	19	0,75	20^{+5}_{-0}
	RF 04 TS095	1/2" - 20 UNF	Brass	9,7	0,38	16	0,63	12,4	0,49	8	0,31	19	0,75	
06	RF 06 TS095	M18x1,5	Brass	9,7	0,38	19	0,75	13	0,51	8	0,31	21	0,83	25^{+5}_{-0}
	RF 06 TS125	M18x1,5	Brass	12,8	0,50	19	0,75	13	0,51	12	0,47	21	0,83	
08	RF 08 TS065	7/8" - 20 UNEF	Brass	6,5	0,26	20	0,78	13	0,51	8	0,31	27	1,06	40^{+5}_{-0}
	RF 08 TS095	7/8" - 20 UNEF	Brass	9,7	0,38	20	0,78	13	0,51	10	0,39	27	1,06	
	RF 08 TS125	7/8" - 20 UNEF	Brass	12,8	0,50	20	0,78	13	0,51	13	0,51	27	1,06	
	RF 08 TS160	7/8" - 20 UNEF	Brass	16,1	0,63	20	0,78	13	0,51	14	0,55	27	1,06	
12	RF 12 TS125	1-1/4" - 18 UNEF	Brass	12,8	0,50	26	1,02	17,5	0,69	13	0,51	36	1,42	70^{+10}_{-0}
	RF 12 TS160	1-1/4" - 18 UNEF	Brass	16,1	0,63	26	1,02	17,5	0,69	14	0,55	36	1,42	
	RF 12 TS190	1-1/4" - 18 UNEF	Brass	19,2	0,76	26	1,02	17,5	0,69	17	0,67	36	1,42	
	RF 12 TS220	1-1/4" - 18 UNEF	Brass	22,4	0,88	28,6	1,12	17,5	0,69	20	0,79	36	1,42	
16	RF 16 TS220	1-19/32" - 20 UN	Brass	22,4	0,88	28,6	1,12	38	1,50	20	0,79	46	1,81	90^{+10}_{-0}
	RF 16 TS255	1-19/32" - 20 UN	Brass	25,6	1,01	34,9	1,37	38	1,50	20	0,79	46	1,81	
	RF 16 TS290	1-19/32" - 20 UN	Brass	28,7	1,13	34,9	1,37	38	1,50	25	0,98	46	1,81	
24	RF 24 TS350	M61x1,5	Brass	35,3	1,39	41,3	1,62	46	1,81	25	0,98	70	2,75	120^{+10}_{-0}

❖ Size

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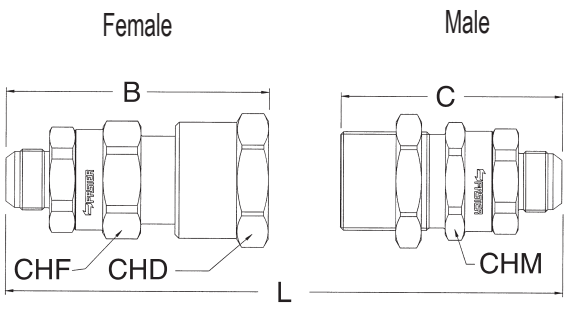
AVAILABLE ITEMS



COMPLETE VERSION WITH ADAPTOR:

	❖	Female	Male	Ø H	Seals materials	B mm	B inc	C mm	C inc	CHD mm	CHD inc	L mm	L inc	CHF mm	CHF inc	CHM mm	CHM inc	Ø T mm	Ø T inc
Complete coupling with adaptor for buckled pipe (standard FIAT 14294)	04	RF 04 TD14 F N	RF 04 TD14 M N	7/16" - 24 UNS	Neoprene	43	1,69	42,5	1,67	19	0,75	78,5	3,09	16	0,63	19	0,75	5,03	0,20
		RF 04 TD14 F H	RF 04 TD14 M H	7/16" - 24 UNS	HNBR	43	1,69	42,5	1,67	19	0,75	78,5	3,09	16	0,63	19	0,75	5,03	0,20
		RF 04 TD14 F E	RF 04 TD14 M E	7/16" - 24 UNS	EPDM	43	1,69	42,5	1,67	19	0,75	78,5	3,09	16	0,63	19	0,75	5,03	0,20
		RF 04 TD14 F V	RF 04 TD14 M V	7/16" - 24 UNS	Viton	43	1,69	42,5	1,67	19	0,75	78,5	3,09	16	0,63	19	0,75	5,03	0,20
	06	RF 06 TD38 F N	RF 06 TD38 M N	5/8" - 18 UNF	Neoprene	53,8	2,12	46	1,81	24	0,94	91	3,58	22	0,87	22	0,87	8,58	0,34
		RF 06 TD38 F H	RF 06 TD38 M H	5/8" - 18 UNF	HNBR	53,8	2,12	46	1,81	24	0,94	91	3,58	22	0,87	22	0,87	8,58	0,34
		RF 06 TD38 F E	RF 06 TD38 M E	5/8" - 18 UNF	EPDM	53,8	2,12	46	1,81	24	0,94	91	3,58	22	0,87	22	0,87	8,58	0,34
		RF 06 TD38 F V	RF 06 TD38 M V	5/8" - 18 UNF	Viton	53,8	2,12	46	1,81	24	0,94	91	3,58	22	0,87	22	0,87	8,58	0,34
	08	RF 08 TD38 F N	RF 08 TD38 M N	5/8" - 18 UNF	Neoprene	65,5	2,58	57,5	2,26	30	1,18	114,5	4,51	27	1,06	27	1,06	8,58	0,34
		RF 08 TD38 F H	RF 08 TD38 M H	5/8" - 18 UNF	HNBR	65,5	2,58	57,5	2,26	30	1,18	114,5	4,51	27	1,06	27	1,06	8,58	0,34
		RF 08 TD38 F E	RF 08 TD38 M E	5/8" - 18 UNF	EPDM	65,5	2,58	57,5	2,26	30	1,18	114,5	4,51	27	1,06	27	1,06	8,58	0,34
		RF 08 TD38 F V	RF 08 TD38 M V	5/8" - 18 UNF	Viton	65,5	2,58	57,5	2,26	30	1,18	114,5	4,51	27	1,06	27	1,06	8,58	0,34
	12	RF 12 TD58 F N	RF 12 TD58 M N	7/8" - 14 UNF	Neoprene	83,5	3,29	72	2,83	41	1,61	141,5	5,57	36	1,42	41	1,61	14,5	0,57
		RF 12 TD58 F H	RF 12 TD58 M H	7/8" - 14 UNF	HNBR	83,5	3,29	72	2,83	41	1,61	141,5	5,57	36	1,42	41	1,61	14,5	0,57
		RF 12 TD58 F E	RF 12 TD58 M E	7/8" - 14 UNF	EPDM	83,5	3,29	72	2,83	41	1,61	141,5	5,57	36	1,42	41	1,61	14,5	0,57
		RF 12 TD58 F V	RF 12 TD58 M V	7/8" - 14 UNF	Viton	83,5	3,29	72	2,83	41	1,61	141,5	5,57	36	1,42	41	1,61	14,5	0,57
	16	RF 16 TD34 F N	RF 16 TD34 M N	1-1/16" - 14 UNS	Neoprene	91,5	3,60	76,5	3,01	50	1,97	152	5,98	46	1,81	50	1,97	17,7	0,70
		RF 16 TD34 F H	RF 16 TD34 M H	1-1/16" - 14 UNS	HNBR	91,5	3,60	76,5	3,01	50	1,97	152	5,98	46	1,81	50	1,97	17,7	0,70
		RF 16 TD34 F E	RF 16 TD34 M E	1-1/16" - 14 UNS	EPDM	91,5	3,60	76,5	3,01	50	1,97	152	5,98	46	1,81	50	1,97	17,7	0,70
		RF 16 TD34 F V	RF 16 TD34 M V	1-1/16" - 14 UNS	Viton	91,5	3,60	76,5	3,01	50	1,97	152	5,98	46	1,81	50	1,97	17,7	0,70
Complete coupling with JIC 37° adaptor (ISO 8434-2)	04	RF 04-13/38S F N	RF 04-13/14S M N	7/16" - 20 UNF	Neoprene	47,9	1,89	47,4	1,87	19	0,75	88,3	3,48	16	0,63	19	0,75		
		RF 04-13/14S F H	RF 04-13/14S M H	7/16" - 20 UNF	HNBR	47,9	1,89	47,4	1,87	19	0,75	88,3	3,48	16	0,63	19	0,75		
		RF 04-13/38S F E	RF 04-13/14S M E	7/16" - 20 UNF	EPDM	47,9	1,89	47,4	1,87	19	0,75	88,3	3,48	16	0,63	19	0,75		
		RF 04-13/38S F V	RF 04-13/14S M V	7/16" - 20 UNF	Viton	47,9	1,89	47,4	1,87	19	0,75	88,3	3,48	16	0,63	19	0,75		
	06	RF 06-13/38S F N	RF 06-13/38S M N	9/16" - 18 UNF	Neoprene	55,8	2,20	48	1,89	24	0,94	95	3,74	21	0,83	21	0,83		
		RF 06-13/38S F H	RF 06-13/38S M H	9/16" - 18 UNF	HNBR	55,8	2,20	48	1,89	24	0,94	95	3,74	21	0,83	21	0,83		
		RF 06-13/38S F E	RF 06-13/38S M E	9/16" - 18 UNF	EPDM	55,8	2,20	48	1,89	24	0,94	95	3,74	21	0,83	21	0,83		
		RF 06-13/38S F V	RF 06-13/38S M V	9/16" - 18 UNF	Viton	55,8	2,20	48	1,89	24	0,94	95	3,74	21	0,83	21	0,83		
	08	RF 08-13/12S F N	RF 08-13/12S M N	3/4" - 16 UNF	Neoprene	70,5	2,78	62,5	2,46	30	1,18	124,5	4,90	27	1,06	27	1,06		
		RF 08-13/12S F H	RF 08-13/12S M H	3/4" - 16 UNF	HNBR	70,5	2,78	62,5	2,46	30	1,18	124,5	4,90	27	1,06	27	1,06		
		RF 08-13/12S F E	RF 08-13/12S M E	3/4" - 16 UNF	EPDM	70,5	2,78	62,5	2,46	30	1,18	124,5	4,90	27	1,06	27	1,06		
		RF 08-13/12S F V	RF 08-13/12S M V	3/4" - 16 UNF	Viton	70,5	2,78	62,5	2,46	30	1,18	124,5	4,90	27	1,06	27	1,06		
	12	RF 12-13/34S F N	RF 12-13/34S M N	1-1/16" - 12 UN	Neoprene	85	3,35	73,5	2,89	41	1,61	144,5	5,69	36	1,42	41	1,61		
		RF 12-13/34S F H	RF 12-13/34S M H	1-1/16" - 12 UN	HNBR	85	3,35	73,5	2,89	41	1,61	144,5	5,69	36	1,42	41	1,61		
		RF 12-13/34S F E	RF 12-13/34S M E	1-1/16" - 12 UN	EPDM	85	3,35	73,5	2,89	41	1,61	144,5	5,69	36	1,42	41	1,61		
		RF 12-13/34S F V	RF 12-13/34S M V	1-1/16" - 12 UN	Viton	85	3,35	73,5	2,89	41	1,61	144,5	5,69	36	1,42	41	1,61		
	16	RF 16-13/114S F N	RF 16-13/114S M N	1-5/8" - 12 UN	Neoprene	96,5	3,80	81,5	3,21	50	1,97	162	6,38	46	1,81	50	1,97		
		RF 16-13/114S F H	RF 16-13/114S M H	1-5/8" - 12 UN	HNBR	96,5	3,80	81,5	3,21	50	1,97	162	6,38	46	1,81	50	1,97		
		RF 16-13/114S F E	RF 16-13/114S M E	1-5/8" - 12 UN	EPDM	96,5	3,80	81,5	3,21	50	1,97	162	6,38	46	1,81	50	1,97		
		RF 16-13/114S F V	RF 16-13/114S M V	1-5/8" - 12 UN	Viton	96,5	3,80	81,5	3,21	50	1,97	162	6,38	46	1,81	50	1,97		

❖ Size

Adaptor with hose-end fitting is also available
Single adaptors are also available

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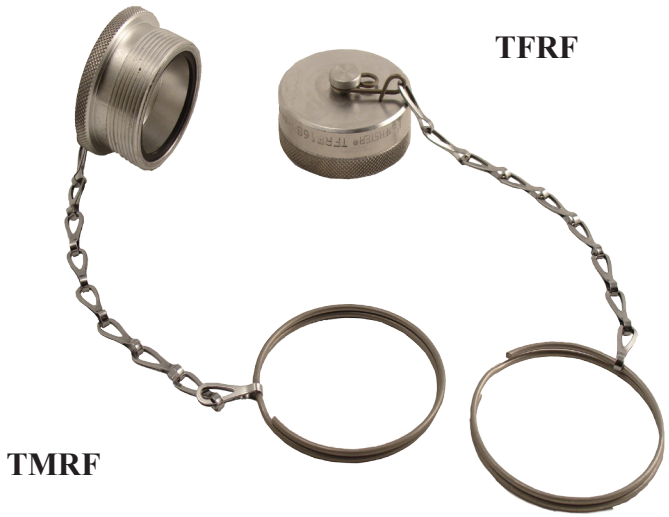
FASTER think faster

DUST PROTECTIONS:

Dust protections are useful accessories in order to ensure maximum life service to coupling.
Those accessories are in aluminium with metal chain and ring in steel or without metal chain.
Refer to the following table for ordering codes.
TMRF and TFRF are equipped with Neoprene seals.

Size		Aluminium dust protection with metal chain	
		Cap for female coupling	Cap for male coupling
1/4”	04	TMRF 04 S N	TFRF 04 S N
3/8”	06	TMRF 06 S N	TFRF 06 S N
1/2”	08	TMRF 08 S N	TFRF 08 S N
3/4”	12	TMRF 12 S N	TFRF 12 S N
1”	16	TMRF 16 S N	TFRF 16 S N
1-1/2”	24	TMRF 24 S N	TFRF 24 S N



SPARE PARTS KITS:

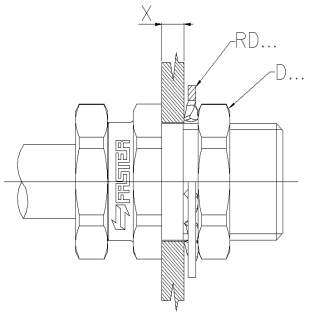
When seals are damaged due to wear or foreign material, it is necessary to replace them.
Original FASTER® spare parts kits are now available.
Detailed instructions are included to achieve the correct replacement of damaged parts.
No special tools are required to carry out replacements.
For seal changing do not use sharpened tools that could damage the new seals or the coupling itself.

Size		Neoprene	HNBR	EPDM	Viton
1/4”	04	* KIT RF04 N	* KIT RF04 H	* KIT RF04 E	* KIT RF04 V
3/8”	06	KIT RF06 N	* KIT RF06 H	* KIT RF06 E	* KIT RF06 V
1/2”	08	KIT RF08 N	KIT RF08 H	* KIT RF08 E	* KIT RF08 V
3/4”	12	KIT RF12 N	KIT RF12 H	* KIT RF12 E	* KIT RF12 V
1”	16	* KIT RF16 N	* KIT RF16 H	* KIT RF16 E	* KIT RF16 V
1-1/2”	24	* KIT RF24 N	* KIT RF24 H	* KIT RF24 E	* KIT RF24 V

∗ On request

LOCK WASHER AND JAM NUT FOR BULKHEAD MOUNTING:

RF series male couplings are arranged for bulkhead mounting by specific lock washers and jam nuts.
Those components are available within accessory kits specified in the following table.



Size		Lock Washer	Jam Nut	Jam Nut Thickness		Max. Panel Thickness X (with lock washer)		Max. Panel Thickness X (without lock washer)		Suggested Hole Diameter on the Panel		Hole Diameter on the Lock Washer		Jam Nut Torque
				mm	inc	mm	inc	mm	inc	mm	inc	mm	inc	Nm
1/4”	04	RDRF 04	D RF 04	5	0,20	4	0,16	5,5	0,22	16,5	0,65	17	0,67	40
3/8”	06	RDRF 06	D RF 06	4,5	0,18	3	0,12	4,5	0,18	21	0,83	21	0,83	40
1/2”	08	RDRF 08	D RF 08	6,5	0,26	6 (5)	0,24 (0,20)	8 (7)	0,31 (0,28)	26	1,02	27	1,06	60
3/4”	12	RDRF 12	D RF 12	8	0,31	5	0,20	7,5	0,30	37	1,46	38	1,50	90
1”	16	RDRF 16	D RF 16	8	0,31	3 (1,5)	0,12 (0,06)	5,5 (4)	0,22 (0,16)	45	1,77	46	1,81	100
1-1/2”	24	RDRF 24	D RF 24	12	0,47	n.a.	n.a.	5	0,20	69	2,72	n.a.	n.a.	120

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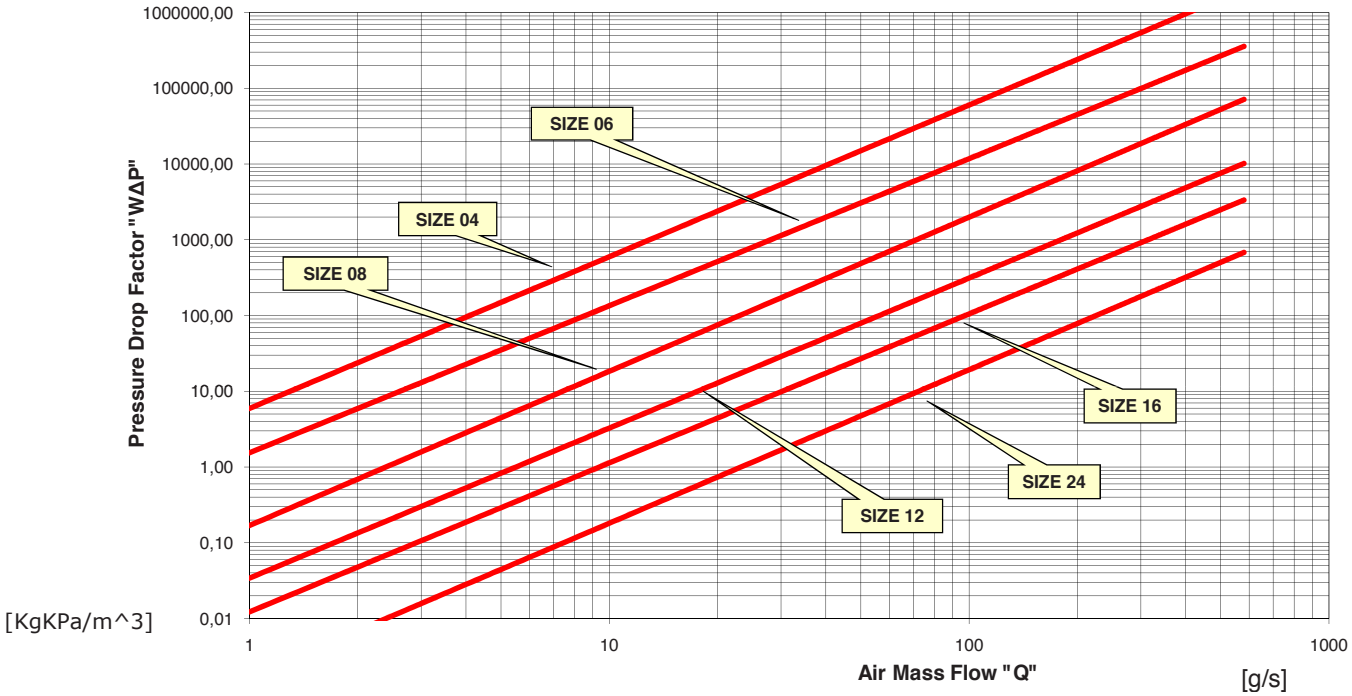
PRESSURE DROP CHART

Tests have been run according to ANSI/ ASHRAE Standard 78-1985 (RA 2003).The diagram shows for each coupling size the pressure drop factor WΔP related to massive air flow rate Q.
The graph allows to calculate the pressure drop (kPa) occurring at specified flow rate (g/s) and viceversa, starting from the known specific weight of the refrigerant gas in fixed conditions.
The table below shows the specific weight of the most common refrigerant gases at different temperatures both liquid and vapour.The data are referred to saturated gas conditions.

Examples:

- You need to calculate a R134a flow rate at 10°C (50°F) in vapour status causing a pressure drop of 13,8 kPa through a RF 08 coupling.
  From the table you notice that in such conditions the specific weight is 20.32 kg/m³.
  You multiply the pressure drop and the specific weight and you obtain the "WΔP" equal to 280,42 kgkPa/m³.
  From the diagram, the massive flowrate "Q"is roughly 40 g/s.
- You need to calculate the pressure drop of a R410A refrigerant in liquid status with a 50 g/s flowrate at 5°C (41°F) through a RF16 coupling.
  The massive flowrate value of 50 g/s shows
  in the diagram a "WΔP" close to 30 kgkPa/ m³.
  To calculate the pressure drop you need to divide 30 kgkPa/m³ by the specific weight shown in the table: close to 5°C (41°F) you obtain 1152 kg/m³ and the corresponding pressure drop is 0,026 kPa.



Temperature °C	°F	R22 Specific weight kg/m³ Liquid	R22 Vapour	R134a Specific weight kg/m³ Liquid	R134a Vapour	R404A Specific weight kg/m³ Liquid	R404A Vapour	R407C Specific weight kg/m³ Liquid	R407C Vapour	R410A Specific weight kg/m³ Liquid	R410A Vapour
-50	-58	1438	3.08	1443	1.65	1314	4.40	1399	2.32	1340	4.52
-45	-49	1424	3.97	1428	2.15	1300	5.53	1385	2.99	1325	5.61
-40	-40	1409	4.86	1414	2.77	1285	6.87	1370	3.82	1310	6.90
-35	-31	1395	6.11	1400	3.53	1270	8.45	1354	4.82	1294	8.43
-30	-22	1380	7.36	1385	4.44	1255	10.31	1339	6.01	1279	10.22
-25	-13	1365	9.06	1371	5.52	1239	12.48	1323	7.43	1262	12.31
-20	-4	1349	10.77	1356	6.80	1222	14.99	1307	9.10	1245	14.73
-15	+5	1333	13.03	1341	8.31	1205	17.90	1290	11.06	1228	17.54
-10	+14	1317	15.30	1325	10.08	1188	21.24	1273	13.32	1210	20.78
-5	+23	1301	18.25	1309	12.12	1170	25.07	1256	15.94	1191	24.51
0	+32	1284	21.21	1293	14.49	1151	29.44	1238	18.94	1172	28.79
5	+41	1267	25.01	1277	17.20	1131	34.44	1219	22.38	1152	33.69
10	+50	1250	28.81	1260	20.32	1111	40.14	1200	26.29	1131	39.31
15	+59	1232	33.63	1243	23.87	1090	46.63	1181	30.75	1109	45.75
20	+68	1213	38.46	1225	27.91	1067	54.04	1160	35.81	1086	53.14
25	+77	1193	44.56	1206	32.50	1044	62.51	1139	41.56	1061	61.64
30	+86	1173	50.65	1187	37.71	1019	72.22	1117	48.10	1036	71.44
35	+95	1152	58.35	1167	43.61	993	83.40	1094	55.56	1008	82.79
40	+104	1131	66.05	1146	50.31	964	96.35	1070	64.09	978	96.06
45	+113	1108	75.87	1125	57.91	934	111.50	1044	73.89	945	111.72
50	+122	1084	85.68	1102	66.55	900	129.45	1017	85.26	909	130.50

Refrigerant Gases Specific weight

▶ Conversions		
1 g/s	=	0.035 oz/s
1 oz/s	=	28.35 g/s
1 kPa	=	0.145 PSI
1 PSI	=	6.89 kPa

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BASIC WORKING PRINCIPLE:

RF... series quick-release couplings are specific devices used in air conditioning and refrigeration systems making line connections and disconnections safer and quicker.
Briefly, quick-release couplings help connection and disconnection of circuits parts involving just a minimal fluid loss and make maintenance, repair and replacement operations, even for complex systems, quicker and more comfortable.
RF... series quick-release couplings are composed of a female half (characterized by the screw-to-connect sleeve) and of a male half. The two halves, when coupled, guarantee the line connection while, when uncoupled, suitable valves assembled within female and male parts close the line and prevent any fluid loss.

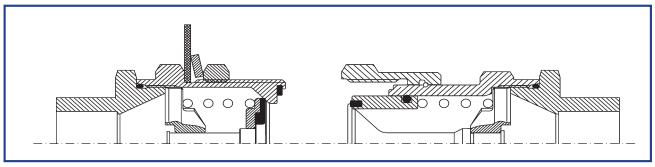
CONNECTION STEPS:

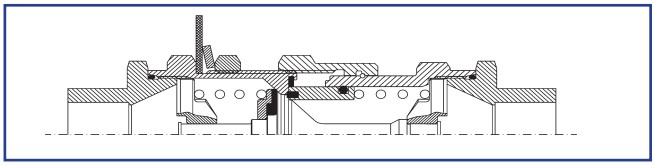
Connection is achieved by acting on the connection sleeve (assembled on the female coupling) that engages on the connection thread present on the male part. Once connection is achieved, a further tightening action is necessary following the suggested torque values specified within technical data.

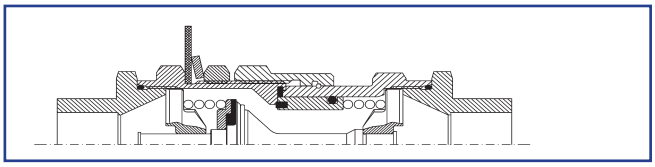
Disconnected Couplings:
- Valves are closed.
- No fluid loss.
- No air inclusion.

Partially Connected Couplings:
- Connection sleeve is engaged on the male half.
- Valves are still closed.
- Thanks to the flat gasket assembled on the male half, any fluid loss is prevented.
- Leakage rate lower than 1 g/year

Connected couplings:
- Connection sleeve is tightened at the correct torque.
- Valves are fully open.
- No fluid loss.
- No air inclusion.
- Leakage rate lower than 1 g/year







INSTALLATION AND CONNECTION INSTRUCTIONS:

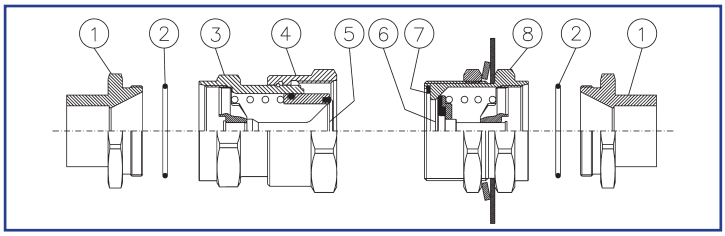
The RF series couplings are designed to allow a quick connection-disconnection of the lines in refrigeration and air conditioning systems without losing refrigerant.
Installation can be achieved by either threaded or braze tubing adaptors.
Bulkhead installation of the male coupling can be achieved by using the suitable jam nut, supplied with male adaptor.

Installation by brazing tubing adaptor (page 3).
- Carefully clean and flux the stub and insert it in the suitable counterbore of the adaptor "1", measure H (page 3).
- Braze the stub in the adaptor.
- Cool the part and remove any residue.
- Liberally lubricate the o-ring seal "2" using compatible refrigeration oil (table page 2).
- Install the o-ring seal on the adaptor making certain the o-ring is not twisted or damaged.
- Thread the coupling body "3" and "8" on the adaptor "1" and tighten the coupling on the adaptor to the suitable torque (see at page 3).
- Liberally lubricate the mating surfaces of valves "5", "6" and the rubber flat gasket "7" using a compatible refrigeration oil.

- Also lubricate the male body thread.

Bulkhead installation
- Insert the male coupling trough the installation hole.
- Put on the male coupling the suitable RDRF lock washer.
- Tighten the jam nut to the proper torque

RF series connection
- Liberally lubricate the mating surfaces of valves, the rubber flat gasket and the o-ring using a compatible refrigeration oil.
- Engage the female sleeve on the male part.
- Tighten the sleeve to the suitable torque
- During connection make certain the couplings don't rotate. To prevent this, always use a second wrench.



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www.faster.it

Faster SpA, Via Ludovico Ariosto, 7 I-26027 RIVOLTA D'ADDA (CR) -ITALY

Subsidiaries:

CHINA - FASTER HYDRAULICS Co, Ltd.
200233 SHANGHAI, P.R. China
n° 1289, Yishan Road, Caohejing Hi-tech Park
(+86) 021-6082 3060 - Fax (+86) 021-6082 3080
info@fasterchina.com.cn

INDIA - FASTER HYDRAULICS Pvt. Ltd.
410501 DISTRICT PUNE, MAHARASTRA, India
Plot n° 10, Gate n° 108 Ambethan, Taluka Khed
(+91) 21 356 7800
info@fasterindia.com

BRASIL - FASTER BRASIL EQUIPAMENTOS HIDRÁULICOS Ltda
SP, 12421-010 PINDAMONHANGABA, Brasil
Avenida Nossa Senhora do Soccorro, 2100, Bairro Soccorro
(+55) 12 3648 1226 - Fax (+55) 12 3648 1226
info@fasterbrasil.com

USA - FASTER Inc.
MAUMEE, OH 43537-9505
6560 Weatherfield, Ct.
(+1) 419-868-8197 - (+1) 800-231-2501 - Fax (+1) 419-868-8360
info@fasterinc.com

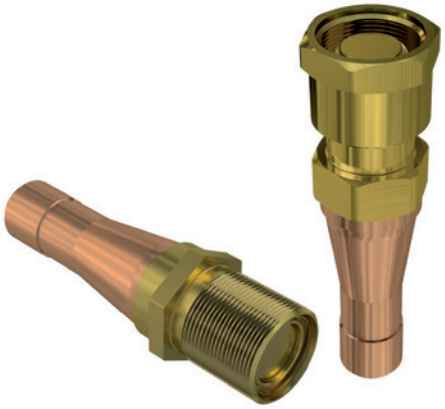
CAT. RF EDITION 10/10-E

RFCS

Screw to connect couplings for air conditioning & refrigeration application.

This range of couplings has been specifically designed for air conditioning and refrigeration systems. Interchangeability according to market driven standards. Couplers in brass material with copper sweat braze adaptor.

Applications



Technical Specifications

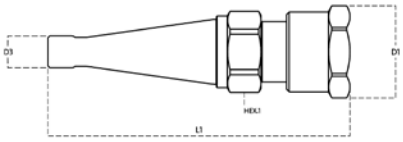
Size			Working Pressure (MPa)	Flow Rate* (g/s)	Air inclusion and fluid loss (cc max)	Maximum leakage rate** (g/year)	Burst pressure (MPa)		
dash	mm	inch					Male	Female	Male + Female
06	10	3/8"	6	44	0.05	1	21	19	26
08	12.5	1/2"	5	107	0.1	1	26	15	25
12	20	3/4"	5	288	0.1	1	21	15	19
16	25	1"	5	477	0.2	1	13	15	15

* Flow rate calculated considering air in standard conditions (20°C, 1 bar). For other gases refer to density table on page 241.
** R22 equivalent refrigerant, at operating range, both connected and disconnected.

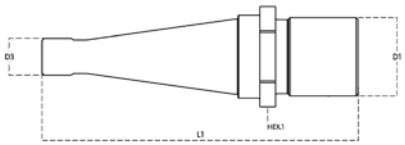
Material	**Brass Copper**
Seals	**CR (Neoprene)**
Working temperatures	**- 40 °C to + 120 °C**
Surface treatment	
Series Interchange	**MARKET**

Valve Type	**Flat**
Connection	**Screw to Connect**
Disconnection	**Unscrew to Disconnect**
Connection Under Pressure	**Allowed Residual**

RFCS - Copper sweat



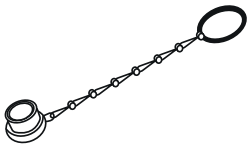
Size		Adaptor Details	FEMALE									
mm	inch	Adaptor Type	Part Number	L (L1 + Thread)		D1		D3		Hex1	
				mm	inch	mm	inch	mm	inch	mm	inch
10	3/8"	COPPER SWEAT	RF 06 CS065 F5N	67.5	2.66	25.0	0.98	6.5	0.26	22.0	0.87
10	3/8"	COPPER SWEAT	RF 06 CS095 F5N	76.0	2.99	27.0	1.06	9.7	0.38	22.0	0.87
12.5	1/2"	COPPER SWEAT	RF 08 CS095 F5N	111.0	4.37	34.0	1.34	9.7	0.38	27.0	1.06
12.5	1/2"	COPPER SWEAT	RF 08 CS125 F5N	107.0	4.21	34.0	1.34	12.8	0.50	27.0	1.06
12.5	1/2"	COPPER SWEAT	RF 08 CS160 F5N	107.0	4.21	34.0	1.34	16.1	0.63	27.0	1.06
20	3/4"	COPPER SWEAT	RF 12 CS160 F5N	131.0	5.16	45.0	1.77	16.1	0.63	36.0	1.42
20	3/4"	COPPER SWEAT	RF 12 CS190 F5N	131.0	5.16	45.0	1.77	19.2	0.76	36.0	1.42
20	3/4"	COPPER SWEAT	RF 12 CS220 F5N	131.0	5.16	45.0	1.77	22.4	0.88	36.0	1.42
25	1"	COPPER SWEAT	RF 16 CS220 F5N	130.8	5.15	53.0	2.09	22.4	0.88	48.0	1.89
25	1"	COPPER SWEAT	RF 16 CS255 F5N	146.5	5.77	55.0	2.17	25.6	1.01	46.0	1.81
25	1"	COPPER SWEAT	RF 16 CS290 F5N	146.5	5.77	55.0	2.17	28.7	1.13	50.0	1.97

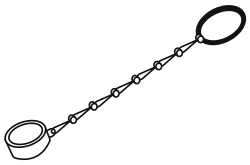


RFCS - Copper sweat

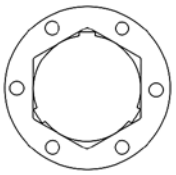
Size		Adaptor details	MALE									
mm	inch	Adaptor Type	Part Number	L (L1 + Thread) mm	L (L1 + Thread) inch	D1 mm	D1 inch	D3 mm	D3 inch	Hex1 mm	Hex1 inch
10	3/8"	COPPER SWEAT	RF 06 CS065 M5N	67.5	2.66	25.0	0.98	6.5	0.26	22.0	0.87
10	3/8"	COPPER SWEAT	RF 06 CS095 M5N	100.0	3.94	32.0	1.26	9.7	0.38	28.0	1.10
12.5	1/2"	COPPER SWEAT	RF 08 CS095 M5N	100.0	3.94	32.0	1.26	9.7	0.38	28.0	1.10
12.5	1/2"	COPPER SWEAT	RF 08 CS125 M5N	96.0	3.78	32.0	1.26	12.8	0.50	28.0	1.10
12.5	1/2"	COPPER SWEAT	RF 08 CS160 M5N	94.0	3.70	32.0	1.26	16.1	0.63	28.0	1.10
20	3/4"	COPPER SWEAT	RF 12 CS160 M5N	118.5	4.67	46.0	1.81	16.1	0.63	41.0	1.61
20	3/4"	COPPER SWEAT	RF 12 CS190 M5N	118.5	4.67	46.0	1.81	19.2	0.76	41.0	1.61
20	3/4"	COPPER SWEAT	RF 12 CS220 M5N	130.8	5.15	53.0	2.09	22.4	0.88	48.0	1.89
25	1"	COPPER SWEAT	RF 16 CS220 M5N	130.8	5.15	53.0	2.09	22.4	0.88	48.0	1.89
25	1"	COPPER SWEAT	RF 16 CS255 M5N	130.8	5.15	53.0	2.09	25.6	1.01	48.0	1.89
25	1"	COPPER SWEAT	RF 16 CS290 M5N	130.8	5.15	53.0	2.09	28.7	1.13	48.0	1.89

RFCS Accessories and Spares





Aluminium dust protections



Mounting flanges