

# The Correct Method to Fit Female Swivel Ends

To ensure a leakproof seal between swivel female hose ends shown in this catalogue and the appropriate adaptors it is necessary to follow the procedure below which is different from hydraulic tube assembly.

## Flats From Wrench Resistance (FFWR)

Parker's recommended assembly method for JIC 37° flare, SAE 45° flare and ORFS swivel female is Flats From Wrench Resistance (FFWR). The torque values assigned by size are for reference only, and are only

applicable to Parker system components using the FFWR method with trivalent chromate passivation on zinc plating of carbon steel components without lubrication.

## Metal-to-metal seal

Screw the nut up hand tight and then tighten further with a spanner according to the values mentioned in the table below. Ensure that in all cases the hose is correctly aligned before tightening the nut onto the corresponding adaptor.

## Spanner torque values

### Metric swivel female

Thread metric	Tube O.D.	Nm	
		nominal	min. - max.
M 12x1.5	06L	16	15 - 17
M 14x1.5	08L	16	15 - 17
M 16x1.5	10L	26	25 - 28
M 18x1.5	12L	37	35 - 39
M 22x1.5	15L	47	45 - 50
M 26x1.5	18L	89	85 - 94
M 30x2	22L	116	110 - 121
M 36x2	28L	137	130 - 143
M 45x2	35L	226	215 - 237
M 52x2	42L	347	330 - 363
M 14x1.5	06S	26	25 - 28
M 16x1.5	08S	42	40 - 44
M 18x1.5	10S	53	50 - 55
M 20x1.5	12S	63	60 - 66
M 22x1.5	14S	79	75 - 83
M 24x1.5	16S	84	80 - 88
M 30x2	20S	126	120 - 132
M 36x2	25S	179	170 - 187
M 42x2	30S	263	250 - 275
M 52x2	38S	368	350 - 385

### JIC 37° swivel female

Thread UNF	size	Flats From Wrench Resistance (FFWR)	Swivel Nut Torque Nm (Ref)
7/16-20	-4	2	18
1/2-20	-5	2	20
9/16-18	-6	1-1/2	30
3/4-16	-8	1-1/2	57
7/8-14	-10	1-1/2	81
1.1/16-12	-12	1-1/4	114
1.5/16-12	-16	1	160
1.5/8-12	-20	1	228
1.7/8-12	-24	1	265
2.1/2-12	-32	1	360

### ORFS swivel female

Thread UNF	size	Flats From Wrench Resistance (FFWR)	Swivel Nut Torque Nm (Ref)
9/16-18	-4	1/2 to 3/4	25
11/16-16	-6	1/2 to 3/4	40
13/16-16	-8	1/2 to 3/4	55
1-14	-10	1/2 to 3/4	80
1.3/16-12	-12	1/3 to 1/2	115
1.7/16-12	-16	1/3 to 1/2	150
1.11/16-12	-20	1/3 to 1/2	205
2-12	-24	1/3 to 1/2	315
2-1/2x12	-32	-	-

### BSP swivel female

Thread BSPP	size	Nm	
		nominal	min. - max.
G1/4	-4	20	15 - 25
G3/8	-6	34	27 - 41
G1/2	-8	60	42 - 76
G5/8	-10	69	44 - 94
G3/4	-12	115	95 - 135
G1	-16	140	115 - 165
G1-1/4	-20	210	140 - 280
G1-1/2	-24	290	215 - 365
G2	-32	400	300 - 500

Note: The assembly torques listed are higher than the test torques published in SAE J1453.

The torque values for other materials are as follows:

- Brass fittings and adapters
  - 65 % of the torque value for steel.
- Stainless steel and Monel
  - Use 5% higher than listed for steel.
  - Threads to be lubricated for these materials.
- Dissimilar metals
  - Use torque value designated for the lower of the two metals.
- All fittings are dry except as noted above.

#### Note

Values given in tables are typical to achieve the recommended assembly methods when fitting material is steel zinc plated. For other materials different values will be applicable (see our recommendations for other materials on this page).