

Global Spiral TTC™ Fittings

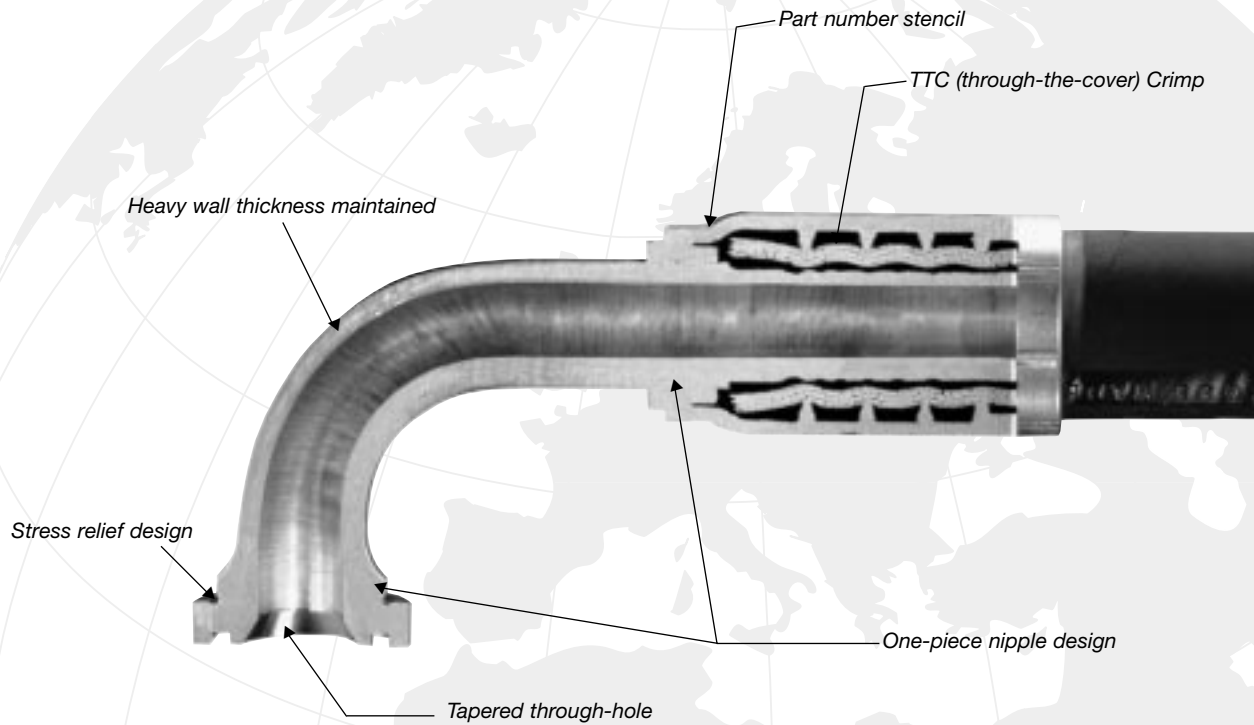
One-Piece Spiral Through-The-Cover
Fittings For Easy Assembly.



For use with FC254, FC273,
FC273B, FC606, FC606B,
GH466 and GH506.

 Aeroquip®

GLOBAL SPIRAL TTC™ FITTINGS FOR USE WITH HOSES: FC254, FC273, FC273B, FC606, FC606B, GH466, GH506



FEATURES

- TTC Crimp
- One-piece nipple design
- One-piece fitting
- Stress relief design
- Heavy wall thickness
- Modern micro-alloy steel
- Tapered through-hole
- Global Design
- Stenciled socket
- Operating pressure to 6000 psi
- Available in -12, -16, -20, -24 & -32

BENEFITS

- Skiving not required, saves time in assembly
- Stronger design, no braze joints
- Easier to assemble
- Maximizes durability
- Heavy duty construction for heavy duty applications
- Maximizes fatigue life
- Improved flow characteristics
- Global availability
- Part number easily identified
- Perfect for hydrostatic drives and other demanding applications
- Multiple configurations and jump sizes to fit a wide array of applications



FT1390 Crimp Machine
Requires FT1209-200 and FT1390-200 series crimp cages for Global Spiral TTC Fittings

AEROQUIP'S NEW HEAVY DUTY GLOBAL SPIRAL TTC FITTINGS FOR USE ON THESE 4 AND 6 WIRE SPIRAL HOSE STYLES.

FC254

Four heavy wire spiral
Exceeds SAE 100R11 performance



| Part Number | Hose I.D. INCHES | Hose O.D. INCHES | Maximum Operating Pressure PSI | Minimum Burst Pressure PSI | Minimum Bend Radius INCHES |
|-------------|---------------------|---------------------|-----------------------------------|-------------------------------|-------------------------------|
| FC254-12 | .75 | 1.26 | 6250 | 25000 | 11.00 |
| FC254-16 | 1.00 | 1.52 | 5000 | 20000 | 12.00 |
| FC254-20 | 1.25 | 1.80 | 4000 | 16000 | 16.50 |
| FC254-24 | 1.50 | 2.13 | 3000 | 12000 | 20.00 |
| FC254-32 | 2.00 | 2.68 | 3000 | 12000 | 25.00 |

Application: Four heavy spiral wire hose for hydraulic system service with petroleum and water base fluids.
Operating Temperature Range: -40°F to +250°F (-40°C to +121°C).

FC273 and FC273B (BRUISER™)

Four or six spiral wire
SAE 100R13, EN856R13



| Part Number | BRUISER Part Number | Hose I.D. INCHES | Hose O.D. INCHES | Maximum Operating Pressure PSI | Minimum Burst Pressure PSI | Minimum Bend Radius INCHES |
|-------------|---------------------|---------------------|---------------------|-----------------------------------|-------------------------------|-------------------------------|
| FC273-12 | FC273B-12 | .75 | 1.26 | 5000 | 20000 | 9.50 |
| FC273-16 | FC273B-16 | 1.00 | 1.52 | 5000 | 20000 | 12.00 |
| FC273-20 | FC273B-20 | 1.25 | 1.96 | 5000 | 20000 | 16.50 |
| FC273-24 | FC273B-24 | 1.50 | 2.26 | 5000 | 20000 | 20.00 |
| FC273-32 | FC273B-32 | 2.00 | 2.80 | 5000 | 20000 | 25.00 |

Application: Heavy spiral hose (four wire for -12, -16; six wire for -20) for hydraulic system service with petroleum and water base fluids.
Operating Temperature Range: -40°F to +250°F (-40°C to +121°C).

Bruiser covered hoses have the highest resistance to abrasion of any known polymer-covered hose.

FC606 and FC606B (BRUISER™)

Six spiral wire
SAE 100R15



| Part Number | BRUISER Part Number | Hose I.D. INCHES | Hose O.D. INCHES | Maximum Operating Pressure PSI | Minimum Burst Pressure PSI | Minimum Bend Radius INCHES |
|-------------|---------------------|---------------------|---------------------|-----------------------------------|-------------------------------|-------------------------------|
| FC606-16 | FC606B-16 | 1.00 | 1.65 | 6000 | 24000 | 12.00 |
| FC606-20 | FC606B-20 | 1.25 | 1.95 | 6000 | 24000 | 16.50 |
| FC606-24 | FC606B-24 | 1.50 | 2.32 | 6000 | 24000 | 20.00 |

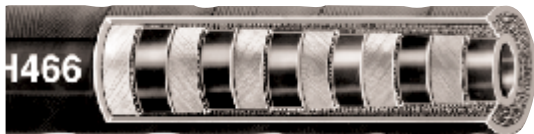
Application: Six wire spiral hose for high pressure hydraulics and hydrostatic transmissions.

Operating Temperature Range: -40°F to +250°F (-40°C to +121°C).

Bruiser covered hoses have the highest resistance to abrasion of any known polymer-covered hose.

GH466

EN856 6SP, Six spiral wire



| Part Number | Hose I.D. INCHES | Hose O.D. INCHES | Maximum Operating Pressure PSI | Minimum Burst Pressure PSI | Minimum Bend Radius INCHES |
|-------------|---------------------|---------------------|-----------------------------------|-------------------------------|-------------------------------|
| GH466-20 | 1.25 | 1.94 | 5510 | 22040 | 16.50 |
| GH466-24 | 1.50 | 2.26 | 5510 | 22040 | 20.08 |

Application: Six wire spiral hose for pressure systems with extreme pressure peaks. For use with petroleum and water-glycol base fluids.

Operating Temperature Range: -40°F to +212°F (-40°C to +100°C).

GH506

Four spiral wire
EN856 4SH



| Part Number | Hose I.D. INCHES | Hose O.D. INCHES | Maximum Operating Pressure PSI | Minimum Burst Pressure PSI | Minimum Bend Radius INCHES |
|-------------|---------------------|---------------------|-----------------------------------|-------------------------------|-------------------------------|
| GH506-12 | .75 | 1.27 | 6090 | 24360 | 11.00 |
| GH506-16 | 1.00 | 1.51 | 5510 | 22040 | 13.38 |
| GH506-20 | 1.25 | 1.79 | 5075 | 20300 | 18.11 |
| GH506-24 | 1.50 | 2.11 | 4350 | 17400 | 22.05 |
| GH506-32 | 2.00 | 2.68 | 3625 | 14500 | 27.56 |

Application: Four wire hose for high pressure hydraulic systems with petroleum and water-glycol base fluids.

Operating Temperature Range: -40°F to +212°F (-40°C to +100°C).

MPa = psi x .0069 MM = inch x .039 *NOTE: Shaded six wire hoses use 1Z prefixed part numbers.



WARNING

Failure to follow Aeroquip process and product instructions and limitations could lead to premature hose assembly failures, resulting in property damage, serious injury or death.

Aeroquip fitting tolerances are engineered to match Aeroquip hose tolerances. The use of Aeroquip fittings on hose supplied by other manufacturers and/or the use of Aeroquip hose with fittings supplied by other manufacturers, may result in the production of unreliable and unsafe hose assemblies and is neither recommended nor authorized by Aeroquip.

Read and understand the operator's manual before attempting to operate any equipment.

Aeroquip hereby disclaims any obligation or liability (including incidental and consequential damages) arising from breach of contract, warranty, or tort (under negligence or strict liability theories) should Aeroquip hose, fittings or assembly equipment be used with the hose, fittings or assembly equipment supplied by another manufacturer, or in the event that product instructions for each specified hose assembly are not followed.

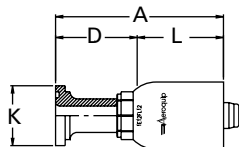


WARNING

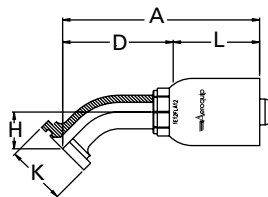
Aeroquip manufactures the terminal ends of our fittings to the appropriate requirement established by the SAE and other industry standards. It is possible to order a fitting with a terminal end that has a performance rating lower than the hose rating. Failure to consider the terminal end performance could lead to premature hose assembly failures, resulting in property damage, serious injury or death.

Global Spiral TTC™ Fittings for use with hose: FC254, FC273, FC273B, (-12, -16), GH506

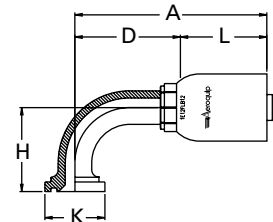
1E Fittings for use on 4 wire construction



Code 61
Straight Split Flange



Code 61
45° Elbow Split Flange

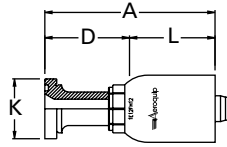


Code 61
90° Elbow Split Flange

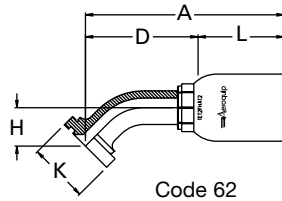
| Fitting Part Number | Flange Head Dia. K | | Hose Size | A | | D | | Insertion Length L | | H | |
|---|--------------------------|------|-----------|------|-------|------|-------|--------------------------|------|------|-------|
| | inch | mm | | inch | mm | inch | mm | inch | mm | inch | mm |
| Straight split flange - Code 61 (SAE J518) | | | | | | | | | | | |
| 1E12FL12 | 1.50 | 38.1 | -12 | 3.92 | 99.5 | 2.15 | 54.5 | 1.77 | 45.0 | | |
| 1E16FL12 | 1.75 | 44.4 | -12 | 3.78 | 96.1 | 2.01 | 51.1 | 1.77 | 45.0 | | |
| 1E16FL16 | 1.75 | 44.4 | -16 | 4.78 | 121.3 | 2.22 | 56.3 | 2.56 | 65.0 | | |
| 1E20FL16 | 2.00 | 50.8 | -16 | 4.94 | 125.5 | 2.38 | 60.5 | 2.56 | 65.0 | | |
| 1E20FL20 | 2.00 | 50.8 | -20 | 5.57 | 141.5 | 2.62 | 66.5 | 2.95 | 75.0 | | |
| 1E24FL20 | 2.38 | 60.3 | -20 | 6.45 | 163.8 | 3.50 | 88.8 | 2.95 | 75.0 | | |
| 1E24FL24 | 2.38 | 60.3 | -24 | 6.61 | 167.8 | 3.54 | 89.8 | 3.07 | 78.0 | | |
| 1E32FL24 | 2.81 | 71.4 | -24 | 6.73 | 170.9 | 3.66 | 92.9 | 3.07 | 78.0 | | |
| 1E32FL32 | 2.81 | 71.4 | -32 | 6.81 | 173.0 | 3.74 | 95.0 | 3.07 | 78.0 | | |
| 45° split flange - Code 61 (SAE J518) | | | | | | | | | | | |
| 1E12FLA12 | 1.50 | 38.1 | -12 | 4.93 | 125.3 | 3.16 | 80.3 | 1.77 | 45.0 | 1.06 | 27.0 |
| 1E16FLA12 | 1.75 | 44.4 | -12 | 5.37 | 136.5 | 3.60 | 91.5 | 1.77 | 45.0 | 1.26 | 32.0 |
| 1E16FLA16 | 1.75 | 44.4 | -16 | 6.37 | 161.7 | 3.81 | 96.7 | 2.56 | 65.0 | 1.26 | 32.0 |
| 1E20FLA16 | 2.00 | 50.8 | -16 | 6.99 | 177.4 | 4.43 | 112.4 | 2.56 | 65.0 | 1.54 | 39.0 |
| 1E20FLA20 | 2.00 | 50.8 | -20 | 7.61 | 193.4 | 4.66 | 118.4 | 2.95 | 75.0 | 1.54 | 39.0 |
| 1E24FLA20 | 2.38 | 60.3 | -20 | 8.12 | 206.3 | 5.17 | 131.3 | 2.95 | 75.0 | 1.77 | 45.0 |
| 1E24FLA24 | 2.38 | 60.3 | -24 | 8.28 | 210.3 | 5.21 | 132.3 | 3.07 | 78.0 | 1.77 | 45.0 |
| 1E32FLA24 | 2.81 | 71.4 | -24 | 9.73 | 247.2 | 6.66 | 169.2 | 3.07 | 78.0 | 2.26 | 57.5 |
| 1E32FLA32 | 2.81 | 71.4 | -32 | 9.81 | 249.3 | 6.74 | 171.3 | 3.07 | 78.0 | 2.26 | 57.5 |
| 90° split flange - Code 61 (SAE J518) | | | | | | | | | | | |
| 1E12FLB12 | 1.50 | 38.1 | -12 | 4.72 | 120.0 | 2.95 | 75.0 | 1.77 | 45.0 | 2.32 | 59.0 |
| 1E16FLB12 | 1.75 | 44.4 | -12 | 5.17 | 131.4 | 3.40 | 86.4 | 1.77 | 45.0 | 2.80 | 71.0 |
| 1E16FLB16 | 1.75 | 44.4 | -16 | 6.17 | 156.6 | 3.61 | 91.6 | 2.56 | 65.0 | 2.80 | 71.0 |
| 1E20FLB16 | 2.00 | 50.8 | -16 | 6.79 | 172.4 | 4.23 | 107.4 | 2.56 | 65.0 | 3.50 | 89.0 |
| 1E20FLB20 | 2.00 | 50.8 | -20 | 7.41 | 188.4 | 4.46 | 113.4 | 2.95 | 75.0 | 3.50 | 89.0 |
| 1E24FLB20 | 2.38 | 60.3 | -20 | 7.92 | 201.1 | 4.96 | 126.1 | 2.95 | 75.0 | 4.09 | 104.0 |
| 1E24FLB24 | 2.38 | 60.3 | -24 | 8.07 | 205.1 | 5.00 | 127.1 | 3.07 | 78.0 | 4.09 | 104.0 |
| 1E32FLB24 | 2.81 | 71.4 | -24 | 9.59 | 243.6 | 6.52 | 165.6 | 3.07 | 78.0 | 5.43 | 138.0 |
| 1E32FLB32 | 2.81 | 71.4 | -32 | 9.67 | 245.7 | 6.60 | 167.7 | 3.07 | 78.0 | 5.43 | 138.0 |

Global Spiral TTC™ Fittings for use with hose: FC254, FC273, FC273B, FC606, FC606B, GH466, GH506

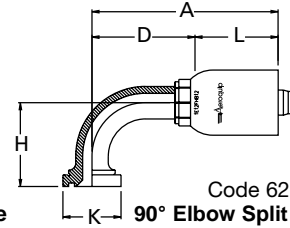
1E Fittings for use on 4 wire construction
1Z Fittings for use on 6 wire construction



Code 62
Straight Split Flange



Code 62
45° Elbow Split Flange



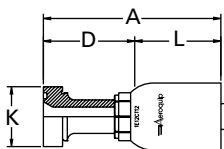
Code 62
90° Elbow Split Flange

| Fitting Part Number | Flange Head Dia. K | | Hose Size | A | | D | | Insertion Length L | | H | |
|---|--------------------------|------|-----------|------|-------|------|-------|--------------------------|------|------|-------|
| | inch | mm | | inch | mm | inch | mm | inch | mm | inch | mm |
| Straight split flange – Code 62 (SAE J518) | | | | | | | | | | | |
| 1E12FH12 | 1.62 | 41.3 | -12 | 4.16 | 105.8 | 2.39 | 60.8 | 1.77 | 45.0 | | |
| 1E16FH12 | 1.88 | 47.6 | -12 | 4.33 | 110.0 | 2.56 | 65.0 | 1.77 | 45.0 | | |
| 1E16FH16 | 1.88 | 47.6 | -16 | 5.32 | 135.2 | 2.76 | 70.2 | 2.56 | 65.0 | | |
| 1Z16FH16 | 1.88 | 47.6 | -16 | 5.32 | 135.2 | 2.76 | 70.2 | 2.56 | 65.0 | | |
| 1E20FH16 | 2.12 | 54.0 | -16 | 5.22 | 132.6 | 2.66 | 67.6 | 2.56 | 65.0 | | |
| 1E20FH20 | 2.12 | 54.0 | -20 | 5.85 | 148.6 | 2.90 | 73.6 | 2.95 | 75.0 | | |
| 1Z20FH16 | 2.12 | 54.0 | -16 | 5.22 | 132.6 | 2.66 | 67.6 | 2.56 | 65.0 | | |
| 1Z20FH20 | 2.12 | 54.0 | -20 | 5.85 | 148.6 | 2.90 | 73.6 | 2.95 | 75.0 | | |
| 1E24FH20 | 2.50 | 63.5 | -20 | 7.31 | 185.6 | 4.35 | 110.6 | 2.95 | 75.0 | | |
| 1E24FH24 | 2.50 | 63.5 | -24 | 7.46 | 189.6 | 4.39 | 111.6 | 3.07 | 78.0 | | |
| 1Z24FH20 | 2.50 | 63.5 | -20 | 7.31 | 185.6 | 4.35 | 110.6 | 2.95 | 75.0 | | |
| 1Z24FH24 | 2.50 | 63.5 | -24 | 7.46 | 189.6 | 4.39 | 111.6 | 3.07 | 78.0 | | |
| 1E32FH24 | 3.13 | 79.4 | -24 | 7.90 | 200.6 | 4.83 | 122.6 | 3.07 | 78.0 | | |
| 1E32FH32 | 3.13 | 79.4 | -32 | 7.98 | 202.7 | 4.91 | 124.7 | 3.07 | 78.0 | | |
| 1Z32FH24 | 3.13 | 79.4 | -24 | 7.90 | 200.6 | 4.83 | 122.6 | 3.07 | 78.0 | | |
| 1Z32FH32 | 3.13 | 79.4 | -32 | 7.98 | 202.7 | 4.91 | 124.7 | 3.07 | 78.0 | | |
| 45° split flange - Code 62 (SAE J518) | | | | | | | | | | | |
| 1E12FHA12 | 1.62 | 41.3 | -12 | 4.93 | 125.3 | 3.16 | 80.3 | 1.77 | 45.0 | 1.06 | 27.0 |
| 1E16FHA12 | 1.88 | 47.6 | -12 | 5.37 | 136.5 | 3.60 | 91.5 | 1.77 | 45.0 | 1.26 | 32.0 |
| 1E16FHA16 | 1.88 | 47.6 | -16 | 6.37 | 161.7 | 3.81 | 96.7 | 2.56 | 65.0 | 1.26 | 32.0 |
| 1Z16FHA16 | 1.88 | 47.6 | -16 | 6.37 | 161.7 | 3.81 | 96.7 | 2.56 | 65.0 | 1.26 | 32.0 |
| 1E20FHA16 | 2.12 | 54.0 | -16 | 6.99 | 177.4 | 4.43 | 112.4 | 2.56 | 65.0 | 1.54 | 39.0 |
| 1E20FHA20 | 2.12 | 54.0 | -20 | 7.61 | 193.4 | 4.66 | 118.4 | 2.95 | 75.0 | 1.54 | 39.0 |
| 1Z20FHA16 | 2.12 | 54.0 | -16 | 6.99 | 177.4 | 4.43 | 112.4 | 2.56 | 65.0 | 1.54 | 39.0 |
| 1Z20FHA20 | 2.12 | 54.0 | -20 | 7.61 | 193.4 | 4.66 | 118.4 | 2.95 | 75.0 | 1.54 | 39.0 |
| 1E24FHA20 | 2.50 | 63.5 | -20 | 8.12 | 206.3 | 5.17 | 131.3 | 2.95 | 75.0 | 1.77 | 45.0 |
| 1E24FHA24 | 2.50 | 63.5 | -24 | 8.28 | 210.3 | 5.21 | 132.3 | 3.07 | 78.0 | 1.77 | 45.0 |
| 1Z24FHA20 | 2.50 | 63.5 | -20 | 8.12 | 206.3 | 5.17 | 131.3 | 2.95 | 75.0 | 1.77 | 45.0 |
| 1Z24FHA24 | 2.50 | 63.5 | -24 | 8.28 | 210.3 | 5.21 | 132.3 | 3.07 | 78.0 | 1.77 | 45.0 |
| 1E32FHA24 | 3.13 | 79.4 | -24 | 9.73 | 247.2 | 6.66 | 169.2 | 3.07 | 78.0 | 2.26 | 57.5 |
| 1E32FHA32 | 3.13 | 79.4 | -32 | 9.81 | 249.3 | 6.74 | 171.3 | 3.07 | 78.0 | 2.26 | 57.5 |
| 1Z32FHA24 | 3.13 | 79.4 | -24 | 9.73 | 247.2 | 6.66 | 169.2 | 3.07 | 78.0 | 2.26 | 57.5 |
| 1Z32FHA32 | 3.13 | 79.4 | -32 | 9.81 | 249.3 | 6.74 | 171.3 | 3.07 | 78.0 | 2.26 | 57.5 |
| 90° split flange - Code 62 (SAE J518) | | | | | | | | | | | |
| 1E12FHB12 | 1.62 | 41.3 | -12 | 4.72 | 120.0 | 2.95 | 75.0 | 1.77 | 45.0 | 2.32 | 59.0 |
| 1E16FHB12 | 1.88 | 47.6 | -12 | 5.17 | 131.4 | 3.40 | 86.4 | 1.77 | 45.0 | 2.80 | 71.0 |
| 1E16FHB16 | 1.88 | 47.6 | -16 | 6.17 | 156.6 | 3.61 | 91.6 | 2.56 | 65.0 | 2.80 | 71.0 |
| 1Z16FHB16 | 1.88 | 47.6 | -16 | 6.17 | 156.6 | 3.61 | 91.6 | 2.56 | 65.0 | 2.80 | 71.0 |
| 1E20FHB16 | 2.12 | 54.0 | -16 | 6.79 | 172.4 | 4.23 | 107.4 | 2.56 | 65.0 | 3.50 | 89.0 |
| 1E20FHB20 | 2.12 | 54.0 | -20 | 7.41 | 188.4 | 4.46 | 113.4 | 2.95 | 75.0 | 3.50 | 89.0 |
| 1Z20FHB16 | 2.12 | 54.0 | -16 | 6.79 | 172.4 | 4.23 | 107.4 | 2.56 | 65.0 | 3.50 | 89.0 |
| 1Z20FHB20 | 2.12 | 54.0 | -20 | 7.41 | 188.4 | 4.46 | 113.4 | 2.95 | 75.0 | 3.50 | 89.0 |
| 1E24FHB20 | 2.50 | 63.5 | -20 | 7.92 | 201.1 | 4.96 | 126.1 | 2.95 | 75.0 | 4.09 | 104.0 |
| 1E24FHB24 | 2.50 | 63.5 | -24 | 8.07 | 205.1 | 5.00 | 127.1 | 3.07 | 78.0 | 4.09 | 104.0 |
| 1Z24FHB20 | 2.50 | 63.5 | -20 | 7.92 | 201.1 | 4.96 | 126.1 | 2.95 | 75.0 | 4.09 | 104.0 |
| 1Z24FHB24 | 2.50 | 63.5 | -24 | 8.07 | 205.1 | 5.00 | 127.1 | 3.07 | 78.0 | 4.09 | 104.0 |
| 1E32FHB24 | 3.13 | 79.4 | -24 | 9.59 | 243.6 | 6.52 | 165.6 | 3.07 | 78.0 | 5.43 | 138.0 |
| 1E32FHB32 | 3.13 | 79.4 | -32 | 9.67 | 245.7 | 6.60 | 167.7 | 3.07 | 78.0 | 5.43 | 138.0 |
| 1Z32FHB24 | 3.13 | 79.4 | -24 | 9.59 | 243.6 | 6.52 | 165.6 | 3.07 | 78.0 | 5.43 | 138.0 |
| 1Z32FHB32 | 3.13 | 79.4 | -32 | 9.67 | 245.7 | 6.60 | 167.7 | 3.07 | 78.0 | 5.43 | 138.0 |

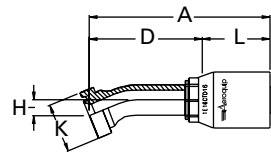
CAT FLANGE FITTINGS

Global Spiral TTC™
Fittings for use with
hose: FC254, FC273,
FC273B, FC606, FC606B,
GH466, GH506

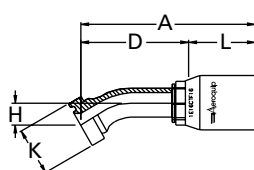
1E Fittings for use on
 4 wire construction
 1Z Fittings for use on
 6 wire construction
 Compatible only with
 D-Ring FF90319-size
 (see page 7)



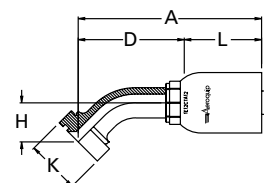
Cat Flange
Straight



Cat Flange
22.5°



Cat Flange
30°

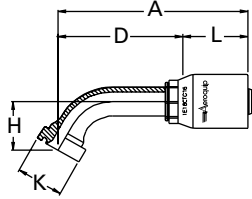


Cat Flange
45° Elbow

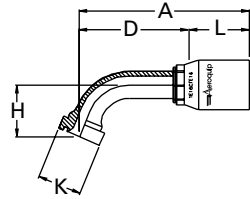
| Fitting Part Number | Flange Head Dia. K | | Hose Size | A | | D | | Insertion Length L | | H | |
|--|--------------------------|------|-----------|-------|-------|------|-------|--------------------------|------|------|------|
| | inch | mm | | inch | mm | inch | mm | inch | mm | inch | mm |
| Caterpillar - Straight split flange | | | | | | | | | | | |
| 1E12CT12 | 1.62 | 41.3 | -12 | 4.38 | 111.3 | 2.61 | 66.3 | 1.77 | 45.0 | | |
| 1E16CT12 | 1.88 | 47.6 | -12 | 4.51 | 114.7 | 2.74 | 69.7 | 1.77 | 45.0 | | |
| 1E16CT16 | 1.88 | 47.6 | -16 | 5.51 | 139.9 | 2.95 | 74.9 | 2.56 | 65.0 | | |
| 1Z16CT16 | 1.88 | 47.6 | -16 | 5.51 | 139.9 | 2.95 | 74.9 | 2.56 | 65.0 | | |
| 1E20CT16 | 2.12 | 54.0 | -16 | 5.37 | 136.5 | 2.81 | 71.5 | 2.56 | 65.0 | | |
| 1E20CT20 | 2.12 | 54.0 | -20 | 6.00 | 152.5 | 3.05 | 77.5 | 2.95 | 75.0 | | |
| 1Z20CT16 | 2.12 | 54.0 | -16 | 5.37 | 136.5 | 2.81 | 71.5 | 2.56 | 65.0 | | |
| 1Z20CT20 | 2.12 | 54.0 | -20 | 6.00 | 152.5 | 3.05 | 77.5 | 2.95 | 75.0 | | |
| 1Z24CT20 | 2.50 | 63.5 | -20 | 7.37 | 187.3 | 4.42 | 112.3 | 2.95 | 75.0 | | |
| 1Z24CT24 | 2.50 | 63.5 | -24 | 7.53 | 191.3 | 4.46 | 113.3 | 3.07 | 78.0 | | |
| 1Z32CT24 | 3.13 | 79.4 | -24 | 7.96 | 202.3 | 4.89 | 124.3 | 3.07 | 78.0 | | |
| 1Z32CT32 | 3.13 | 79.4 | -32 | 8.05 | 204.4 | 4.98 | 126.4 | 3.07 | 78.0 | | |
| Caterpillar - 22.5° | | | | | | | | | | | |
| 1E12CTD12 | 1.62 | 41.3 | -12 | 5.43 | 137.9 | 3.66 | 92.9 | 1.77 | 45.0 | 0.54 | 13.7 |
| 1E16CTD16 | 1.88 | 47.6 | -16 | 6.88 | 174.8 | 4.32 | 109.8 | 2.56 | 65.0 | 0.60 | 15.3 |
| 1Z16CTD16 | 1.88 | 47.6 | -16 | 6.88 | 174.8 | 4.32 | 109.8 | 2.56 | 65.0 | 0.60 | 15.3 |
| 1E20CTD16 | 2.12 | 54.0 | -16 | 7.56 | 191.9 | 5.00 | 126.9 | 2.56 | 65.0 | 0.70 | 17.8 |
| 1Z20CTD20 | 2.12 | 54.0 | -20 | 8.19 | 207.9 | 5.23 | 132.9 | 2.95 | 75.0 | 0.70 | 17.8 |
| 1Z24CTD20 | 2.50 | 63.5 | -20 | 8.67 | 220.1 | 5.71 | 145.1 | 2.95 | 75.0 | 0.76 | 19.4 |
| 1Z24CTD24 | 2.50 | 63.5 | -24 | 8.82 | 224.1 | 5.75 | 146.1 | 3.07 | 78.0 | 0.76 | 19.4 |
| Caterpillar - 30° | | | | | | | | | | | |
| 1E12CTF12 | 1.62 | 41.3 | -12 | 5.34 | 135.7 | 3.57 | 90.7 | 1.77 | 45.0 | 0.75 | 19.1 |
| 1E16CTF16 | 1.88 | 47.6 | -16 | 6.79 | 172.4 | 4.23 | 107.4 | 2.56 | 65.0 | 0.85 | 21.6 |
| 1Z16CTF16 | 1.88 | 47.6 | -16 | 6.79 | 172.4 | 4.23 | 107.4 | 2.56 | 65.0 | 0.85 | 21.6 |
| 1E20CTF16 | 2.12 | 54.0 | -16 | 7.45 | 189.1 | 4.89 | 124.1 | 2.56 | 65.0 | 1.00 | 25.3 |
| 1Z20CTF20 | 2.12 | 54.0 | -20 | 8.08 | 205.1 | 5.12 | 130.1 | 2.95 | 75.0 | 1.00 | 25.3 |
| 1Z24CTF20 | 2.50 | 63.5 | -20 | 8.55 | 217.1 | 5.59 | 142.1 | 2.95 | 75.0 | 1.09 | 27.7 |
| 1Z24CTF24 | 2.50 | 63.5 | -24 | 8.70 | 221.1 | 5.63 | 143.1 | 3.07 | 78.0 | 1.09 | 27.7 |
| 1Z32CTF24 | 3.13 | 79.4 | -24 | 10.26 | 260.5 | 7.19 | 182.5 | 3.07 | 78.0 | 1.37 | 34.8 |
| 1Z32CTF32 | 3.13 | 79.4 | -32 | 10.34 | 262.6 | 7.27 | 184.6 | 3.07 | 78.0 | 1.37 | 34.8 |
| Caterpillar - 45° split flange | | | | | | | | | | | |
| 1E12CTA12 | 1.62 | 41.3 | -12 | 5.08 | 129.2 | 3.31 | 84.2 | 1.77 | 45.0 | 1.22 | 30.9 |
| 1E16CTA12 | 1.88 | 47.6 | -12 | 5.50 | 139.8 | 3.73 | 94.8 | 1.77 | 45.0 | 1.39 | 35.3 |
| 1E16CTA16 | 1.88 | 47.6 | -16 | 6.50 | 165.0 | 3.94 | 100.0 | 2.56 | 65.0 | 1.39 | 35.3 |
| 1Z16CTA16 | 1.88 | 47.6 | -16 | 6.50 | 165.0 | 3.94 | 100.0 | 2.56 | 65.0 | 1.39 | 35.3 |
| 1E20CTA16 | 2.12 | 54.0 | -16 | 7.10 | 180.2 | 4.54 | 115.2 | 2.56 | 65.0 | 1.65 | 41.8 |
| 1E20CTA20 | 2.12 | 54.0 | -20 | 7.72 | 196.2 | 4.77 | 121.2 | 2.95 | 75.0 | 1.65 | 41.8 |
| 1Z20CTA16 | 2.12 | 54.0 | -16 | 7.10 | 180.2 | 4.54 | 115.2 | 2.56 | 65.0 | 1.65 | 41.8 |
| 1Z20CTA20 | 2.12 | 54.0 | -20 | 7.72 | 196.2 | 4.77 | 121.2 | 2.95 | 75.0 | 1.65 | 41.8 |
| 1Z24CTA20 | 2.50 | 63.5 | -20 | 8.17 | 207.5 | 5.22 | 132.5 | 2.95 | 75.0 | 1.82 | 46.2 |
| 1Z24CTA24 | 2.50 | 63.5 | -24 | 8.33 | 211.5 | 5.26 | 133.5 | 3.07 | 78.0 | 1.82 | 46.2 |
| 1Z32CTA24 | 3.13 | 79.4 | -24 | 9.78 | 248.4 | 6.71 | 170.4 | 3.07 | 78.0 | 2.31 | 58.7 |
| 1Z32CTA32 | 3.13 | 79.4 | -32 | 9.86 | 250.5 | 6.79 | 172.5 | 3.07 | 78.0 | 2.31 | 58.7 |

Global Spiral TTC™
Fittings for use with
hose: FC254, FC273,
FC273B, FC606, FC606B,
GH466, GH506

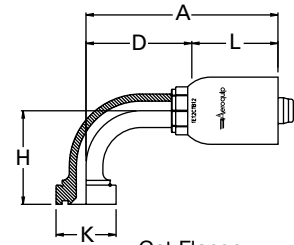
1E Fittings for use on
 4 wire construction
 1Z Fittings for use on
 6 wire construction
 Compatible only with
 D-Ring FF90319-size
 (see bottom of page)



Cat Flange
60°



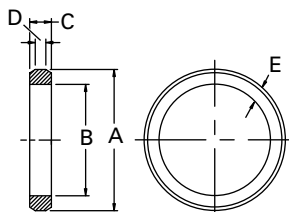
Cat Flange
67.5°



Cat Flange
90°

| Fitting Part Number | Flange Head Dia. K | | Hose Size | A | | D | | Insertion Length L | | H | |
|---------------------------------------|--------------------------|------|-----------|-------|-------|------|-------|--------------------------|------|------|-------|
| | inch | mm | | inch | mm | inch | mm | inch | mm | inch | mm |
| Caterpillar - 60° | | | | | | | | | | | |
| 1E12CTG12 | 1.62 | 41.3 | -12 | 5.83 | 148.1 | 4.06 | 103.1 | 1.77 | 45.0 | 1.66 | 42.3 |
| 1E16CTG16 | 1.88 | 47.6 | -16 | 7.45 | 189.3 | 4.89 | 124.3 | 2.56 | 65.0 | 1.92 | 48.7 |
| 1Z16CTG16 | 1.88 | 47.6 | -16 | 7.45 | 189.3 | 4.89 | 124.3 | 2.56 | 65.0 | 1.92 | 48.7 |
| 1E20CTG16 | 2.12 | 54.0 | -16 | 8.36 | 212.4 | 5.80 | 147.4 | 2.56 | 65.0 | 2.33 | 59.3 |
| 1Z20CTG20 | 2.12 | 54.0 | -20 | 8.99 | 228.4 | 6.04 | 153.4 | 2.95 | 75.0 | 2.33 | 59.3 |
| 1Z24CTG20 | 2.50 | 63.5 | -20 | 9.70 | 246.4 | 6.75 | 171.4 | 2.95 | 75.0 | 2.62 | 66.6 |
| 1Z24CTG24 | 2.50 | 63.5 | -24 | 9.86 | 250.4 | 6.79 | 172.4 | 3.07 | 78.0 | 2.62 | 66.6 |
| 1Z32CTG24 | 3.13 | 79.4 | -24 | 11.94 | 303.2 | 8.87 | 225.2 | 3.07 | 78.0 | 3.44 | 87.3 |
| 1Z32CTG32 | 3.13 | 79.4 | -32 | 12.02 | 305.3 | 8.95 | 227.3 | 3.07 | 78.0 | 3.44 | 87.3 |
| Caterpillar - 67.5° | | | | | | | | | | | |
| 1E12CTE12 | 1.62 | 41.3 | -12 | 5.60 | 142.2 | 3.83 | 97.2 | 1.77 | 45.0 | 1.90 | 48.2 |
| 1E16CTE16 | 1.88 | 47.6 | -16 | 7.18 | 182.5 | 4.62 | 117.5 | 2.56 | 65.0 | 2.20 | 55.8 |
| 1Z16CTE16 | 1.88 | 47.6 | -16 | 7.18 | 182.5 | 4.62 | 117.5 | 2.56 | 65.0 | 2.20 | 55.8 |
| 1E20CTE16 | 2.12 | 54.0 | -16 | 8.04 | 204.1 | 5.48 | 139.1 | 2.56 | 65.0 | 2.68 | 68.1 |
| 1Z20CTE20 | 2.12 | 54.0 | -20 | 8.67 | 220.1 | 5.71 | 145.1 | 2.95 | 75.0 | 2.68 | 68.1 |
| 1Z24CTE20 | 2.50 | 63.5 | -20 | 9.33 | 237.0 | 6.38 | 162.0 | 2.95 | 75.0 | 3.02 | 76.8 |
| 1Z24CTE24 | 2.50 | 63.5 | -24 | 9.49 | 241.0 | 6.42 | 163.0 | 3.07 | 78.0 | 3.02 | 76.8 |
| Caterpillar - 90° split flange | | | | | | | | | | | |
| 1E12CTB12 | 1.62 | 41.3 | -12 | 4.72 | 120.0 | 2.95 | 75.0 | 1.77 | 45.0 | 2.54 | 64.5 |
| 1E16CTB12 | 1.88 | 47.6 | -12 | 5.17 | 131.4 | 3.40 | 86.4 | 1.77 | 45.0 | 2.98 | 75.7 |
| 1E16CTB16 | 1.88 | 47.6 | -16 | 6.17 | 156.6 | 3.61 | 91.6 | 2.56 | 65.0 | 2.98 | 75.7 |
| 1Z16CTB16 | 1.88 | 47.6 | -16 | 6.17 | 156.6 | 3.61 | 91.6 | 2.56 | 65.0 | 2.98 | 75.7 |
| 1E20CTB16 | 2.12 | 54.0 | -16 | 6.79 | 172.4 | 4.23 | 107.4 | 2.56 | 65.0 | 3.66 | 92.9 |
| 1E20CTB20 | 2.12 | 54.0 | -20 | 7.41 | 188.4 | 4.46 | 113.4 | 2.95 | 75.0 | 3.66 | 92.9 |
| 1Z20CTB16 | 2.12 | 54.0 | -16 | 6.79 | 172.4 | 4.23 | 107.4 | 2.56 | 65.0 | 3.66 | 92.9 |
| 1Z20CTB20 | 2.12 | 54.0 | -20 | 7.41 | 188.4 | 4.46 | 113.4 | 2.95 | 75.0 | 3.66 | 92.9 |
| 1Z24CTB20 | 2.50 | 63.5 | -20 | 7.92 | 201.1 | 4.96 | 126.1 | 2.95 | 75.0 | 4.16 | 105.7 |
| 1Z24CTB24 | 2.50 | 63.5 | -24 | 8.07 | 205.1 | 5.00 | 127.1 | 3.07 | 78.0 | 4.16 | 105.7 |
| 1Z32CTB24 | 3.13 | 79.4 | -24 | 9.59 | 243.6 | 6.52 | 165.6 | 3.07 | 78.0 | 5.50 | 139.6 |
| 1Z32CTB32 | 3.13 | 79.4 | -32 | 9.67 | 245.7 | 6.60 | 167.7 | 3.07 | 78.0 | 5.50 | 139.6 |

Cat Flange D-Ring*



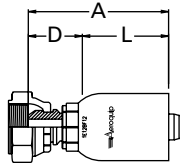
| Part Number | A Ref | B Ref | C Ref | D Ref | E Ref |
|----------------|----------|----------|----------|----------|----------|
| FF90319-12 | 1.27 | 1.00 | .20 | .10 | .135 |
| FF90319-16 | 1.52 | 1.25 | .20 | .10 | .135 |
| FF90319-20 | 1.77 | 1.50 | .20 | .10 | .135 |
| FF90319-24 | 2.03 | 1.76 | .20 | .10 | .135 |
| FF90319-32 | 2.78 | 2.52 | .20 | .10 | .135 |

Temperature range: -40°F to +212°F.
 Material: Nitrile (Buna-N)
 *To be used only with Cat flange.

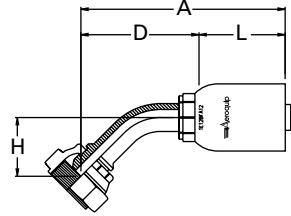
BSPP FITTINGS

Global Spiral TTC™ Fittings for use with hose: FC254, FC273, FC273B, FC606, FC606B, GH466, GH506

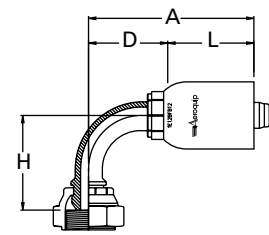
1E Fittings for use on 4 wire construction
1Z Fittings for use on 6 wire construction



BSPP Swivel
Straight



BSPP Swivel
45° Elbow

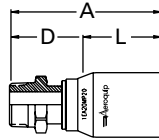


BSPP Swivel
90° Elbow

| Fitting Part Number | Thread | Hose Size | A | | D | | Insertion Length L | | H | |
|---|---------|-----------|------|-------|------|-------|--------------------------|------|------|-------|
| | | | inch | mm | inch | mm | inch | mm | inch | mm |
| BSP/JIS Female Swivel (BF) | | | | | | | | | | |
| 1E12BF12 | G 3/4 | -12 | 3.27 | 83.0 | 1.50 | 38.0 | 1.77 | 45.0 | | |
| 1E16BF12 | G 1 | -12 | 3.22 | 81.7 | 1.44 | 36.7 | 1.77 | 45.0 | | |
| 1E16BF16 | G 1 | -16 | 4.21 | 106.9 | 1.65 | 41.9 | 2.56 | 65.0 | | |
| 1E20BF16 | G 1 1/4 | -16 | 4.13 | 104.9 | 1.57 | 39.9 | 2.56 | 65.0 | | |
| 1E20BF20 | G 1 1/4 | -20 | 4.76 | 120.9 | 1.81 | 45.9 | 2.95 | 75.0 | | |
| 1E24BF24 | G 1 1/2 | -24 | 6.04 | 153.5 | 2.97 | 75.5 | 3.07 | 78.0 | | |
| 1Z24BF24 | G 1 1/2 | -24 | 6.04 | 153.5 | 2.97 | 75.5 | 3.07 | 78.0 | | |
| 1E32BF32 | G 2 | -32 | 6.28 | 159.5 | 3.21 | 81.5 | 3.07 | 78.0 | | |
| 1Z32BF32 | G 2 | -32 | 6.28 | 159.5 | 3.21 | 81.5 | 3.07 | 78.0 | | |
| BSP/JIS Female Swivel, 45° elbow (BFA) | | | | | | | | | | |
| 1E12BFA12 | G 3/4 | -12 | 4.76 | 121.0 | 2.99 | 76.0 | 1.77 | 45.0 | 1.02 | 26.0 |
| 1E16BFA12 | G 1 | -12 | 5.13 | 130.4 | 3.36 | 85.4 | 1.77 | 45.0 | 1.18 | 30.0 |
| 1E16BFA16 | G 1 | -16 | 6.13 | 155.6 | 3.57 | 90.6 | 2.56 | 65.0 | 1.18 | 30.0 |
| 1E20BFA16 | G 1 1/4 | -16 | 6.57 | 166.9 | 4.01 | 101.9 | 2.56 | 65.0 | 1.34 | 34.0 |
| 1E20BFA20 | G 1 1/4 | -20 | 7.19 | 182.6 | 4.25 | 107.9 | 2.95 | 75.0 | 1.34 | 34.0 |
| 1E24BFA24 | G 1 1/2 | -24 | 8.20 | 208.2 | 5.13 | 130.2 | 3.07 | 78.0 | 1.69 | 43.0 |
| 1Z24BFA24 | G 1 1/2 | -24 | 8.20 | 208.2 | 5.13 | 130.2 | 3.07 | 78.0 | 1.69 | 43.0 |
| 1E32BFA32 | G 2 | -32 | 9.78 | 248.5 | 6.71 | 170.5 | 3.07 | 78.0 | 2.23 | 56.6 |
| 1Z32BFA32 | G 2 | -32 | 9.78 | 248.5 | 6.71 | 170.5 | 3.07 | 78.0 | 2.23 | 56.6 |
| BSP/JIS Female Swivel, 90° elbow (BFB) | | | | | | | | | | |
| 1E12BFB12 | G 3/4 | -12 | 4.51 | 114.5 | 2.74 | 69.5 | 1.77 | 45.0 | 2.24 | 57.0 |
| 1E16BFB12 | G 1 | -12 | 4.94 | 125.6 | 3.17 | 80.6 | 1.77 | 45.0 | 2.68 | 68.0 |
| 1E16BFB16 | G 1 | -16 | 5.94 | 150.8 | 3.38 | 85.8 | 2.56 | 65.0 | 2.68 | 68.0 |
| 1E20BFB16 | G 1 1/4 | -16 | 6.44 | 163.7 | 3.89 | 98.7 | 2.56 | 65.0 | 3.11 | 79.0 |
| 1E20BFB20 | G 1 1/4 | -20 | 7.07 | 179.7 | 4.12 | 104.7 | 2.95 | 75.0 | 3.11 | 79.0 |
| 1E24BFB24 | G 1 1/2 | -24 | 8.07 | 205.1 | 5.00 | 127.1 | 3.07 | 78.0 | 4.09 | 104.0 |
| 1Z24BFB24 | G 1 1/2 | -24 | 8.07 | 205.1 | 5.00 | 127.1 | 3.07 | 78.0 | 4.09 | 104.0 |
| 1E32BFB32** | G 2 | -32 | 9.67 | 245.7 | 6.60 | 167.7 | 3.07 | 78.0 | 5.28 | 134.0 |
| 1Z32BFB32 | G 2 | -32 | 9.67 | 245.7 | 6.60 | 167.7 | 3.07 | 78.0 | 5.28 | 134.0 |

NOTE: The JIS parallel thread and BSPP connection are interchangeable.

**Global Spiral TTC™ Fittings for use
with hose: FC254, FC273, FC273B
FC606, FC606B, GH466, GH506**
1E Fittings for use on 4 wire construction
1Z Fittings for use on 6 wire construction



| Fitting Part Number | Thread | Hose Size | A | | D | | Insertion Length L | | Hex inch |
|------------------------|-------------------|-----------|------|-------|------|------|--------------------------|----|-------------|
| | | | inch | mm | inch | mm | inch | mm | |
| Male Pipe (MP) | | | | | | | | | |
| 1EA12MP12 | 3/4-14 NPTF | -12 | 3.89 | 98.7 | 2.12 | 53.7 | 1.77 | 45 | 1 1/4 |
| 1EA16MP16 | 1-11 1/2 NPTF | -16 | 4.94 | 125.4 | 2.38 | 60.4 | 2.56 | 65 | 1 1/2 |
| 1EA20MP20 | 1 1/4-11 1/2 NPTF | -20 | 5.70 | 144.8 | 2.75 | 69.8 | 2.95 | 75 | 1 7/8 |
| 1ZA20MP20 | 1 1/4-11 1/2 NPTF | -20 | 5.70 | 144.8 | 2.75 | 69.8 | 2.95 | 75 | 1 7/8 |
| 1EA24MP24 | 1 1/2-11 1/2 NPTF | -24 | 5.93 | 150.6 | 2.86 | 72.6 | 3.07 | 78 | 2 |
| 1ZA24MP24 | 1 1/2-11 1/2 NPTF | -24 | 5.93 | 150.6 | 2.86 | 72.6 | 3.07 | 78 | 2 |
| 1EA32MP32 | 2-11 1/2 NPTF | -32 | 6.03 | 153.2 | 2.96 | 75.2 | 3.07 | 78 | 2 5/8 |
| 1ZA32MP32 | 2-11 1/2 NPTF | -32 | 6.03 | 153.2 | 2.96 | 75.2 | 3.07 | 78 | 2 5/8 |
| 1EA32AP32 | 2-11 1/2* API | -32 | 6.47 | 164.2 | 3.40 | 86.2 | 3.07 | 78 | 2 5/8 |
| 1ZA32AP32 | 2-11 1/2* API | -32 | 6.47 | 164.2 | 3.40 | 86.2 | 3.07 | 78 | 2 5/8 |

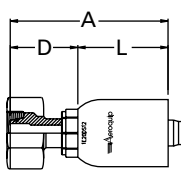
*Conforms to API 5B Thread Standard for Male Pipe Fittings.

DKOS FITTINGS

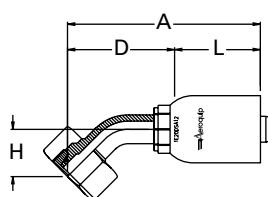
Global Spiral TTC™ Fittings for use with hose: FC254, FC273, FC273B, FC606, FC606B, GH466, GH506

1E Fittings for use on 4 wire construction

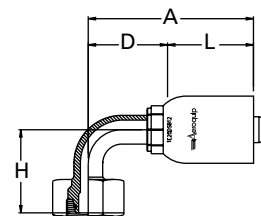
1Z Fittings for use on 6 wire construction



DKOS Swivel
Straight



DKOS Swivel
45° Elbow

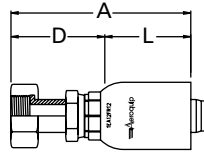


DKOS Swivel
90° Elbow

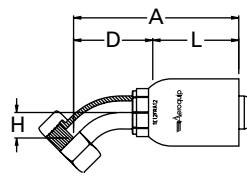
| Fitting Part Number | Thread | Tube O.D. | Hose Size | A | | D | | Insertion Length L | | H | |
|---|---------|--------------|-----------|------|-------|------|-------|--------------------------|------|------|------|
| | | | | inch | mm | inch | mm | inch | mm | inch | mm |
| DKO Female Swivel, Heavy Duty (DS) | | | | | | | | | | | |
| 1E20DS12 | M36 x 2 | 25 | -12 | 3.87 | 98.4 | 2.10 | 53.4 | 1.77 | 45.0 | | |
| 1E25DS12 | M42 x 2 | 30 | -12 | 3.80 | 96.6 | 2.03 | 51.6 | 1.77 | 45.0 | | |
| 1E25DS16 | M42 x 2 | 30 | -16 | 4.80 | 121.8 | 2.24 | 56.8 | 2.56 | 65.0 | | |
| 1Z25DS16 | M42 x 2 | 30 | -16 | 4.80 | 121.8 | 2.24 | 56.8 | 2.56 | 65.0 | | |
| 1E32DS16 | M52 x 2 | 38 | -16 | 4.82 | 122.3 | 2.26 | 57.3 | 2.56 | 65.0 | | |
| 1E32DS20 | M52 x 2 | 38 | -20 | 5.44 | 138.3 | 2.49 | 63.3 | 2.95 | 75.0 | | |
| 1Z32DS16 | M52 x 2 | 38 | -16 | 4.82 | 122.3 | 2.26 | 57.3 | 2.56 | 65.0 | | |
| 1Z32DS20 | M52 x 2 | 38 | -20 | 5.44 | 138.3 | 2.49 | 63.3 | 2.95 | 75.0 | | |
| DKO Female Swivel, Heavy Duty, 45° Elbow (DSA) | | | | | | | | | | | |
| 1E20DSA12 | M36 x 2 | 25 | -12 | 5.13 | 130.3 | 3.36 | 85.3 | 1.77 | 45.0 | 1.26 | 32.0 |
| 1E25DSA12 | M42 x 2 | 30 | -12 | 5.49 | 139.4 | 3.72 | 94.4 | 1.77 | 45.0 | 1.38 | 35.0 |
| 1E25DSA16 | M42 x 2 | 30 | -16 | 6.48 | 164.6 | 3.92 | 99.6 | 2.56 | 65.0 | 1.38 | 35.0 |
| 1Z25DSA16 | M42 x 2 | 30 | -16 | 6.48 | 164.6 | 3.92 | 99.6 | 2.56 | 65.0 | 1.38 | 35.0 |
| 1E32DSA16 | M52 X 2 | 38 | -16 | 6.98 | 177.3 | 4.42 | 112.3 | 2.56 | 65.0 | 1.54 | 39.0 |
| 1E32DSA20 | M52 x 2 | 38 | -20 | 7.61 | 193.3 | 4.66 | 118.3 | 2.95 | 75.0 | 1.54 | 39.0 |
| 1Z32DSA16 | M52 X 2 | 38 | -16 | 6.98 | 177.3 | 4.42 | 112.3 | 2.56 | 65.0 | 1.54 | 39.0 |
| 1Z32DSA20 | M52 x 2 | 38 | -20 | 7.61 | 193.3 | 4.66 | 118.3 | 2.95 | 75.0 | 1.54 | 39.0 |
| DKO Female Swivel, Heavy Duty, 90° elbow (DSB) | | | | | | | | | | | |
| 1E20DSB12 | M36 x 2 | 25 | -12 | 4.72 | 120.0 | 2.95 | 75.0 | 1.77 | 45.0 | 2.56 | 65.0 |
| 1E25DSB12 | M42 X 2 | 30 | -12 | 5.17 | 131.4 | 3.40 | 86.4 | 1.77 | 45.0 | 2.99 | 76.0 |
| 1E25DSB16 | M42 x 2 | 30 | -16 | 6.17 | 156.8 | 3.61 | 91.8 | 2.56 | 65.0 | 2.99 | 76.0 |
| 1Z25DSB16 | M42 x 2 | 30 | -16 | 6.17 | 156.8 | 3.61 | 91.8 | 2.56 | 65.0 | 2.99 | 76.0 |
| 1E32DSB16 | M52 X 2 | 38 | -16 | 6.79 | 172.4 | 4.23 | 107.4 | 2.56 | 65.0 | 3.50 | 89.0 |
| 1E32DSB20 | M52 x 2 | 38 | -20 | 7.41 | 188.4 | 4.46 | 113.4 | 2.95 | 75.0 | 3.50 | 89.0 |
| 1Z32DSB16 | M52 x 2 | 38 | -16 | 6.79 | 172.4 | 4.23 | 107.4 | 2.56 | 65.0 | 3.50 | 89.0 |
| 1Z32DSB20 | M52 x 2 | 38 | -20 | 7.41 | 188.4 | 4.46 | 113.4 | 2.95 | 75.0 | 3.50 | 89.0 |

Global Spiral TTC™ Fittings for use
with hose: FC254, FC273, FC273B,
FC606, FC606B, GH466, GH506

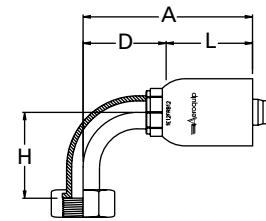
1E Fittings for use on 4 wire construction
1Z Fittings for use on 6 wire construction



ORS® Swivel
Straight



ORS® Swivel
45° Elbow

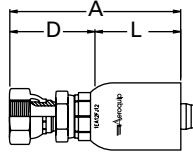


ORS® Swivel
90° Elbow

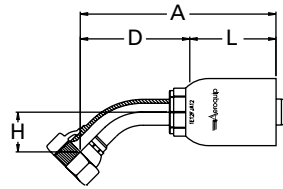
| Fitting Part Number | Thread | Hose Size | A | | D | | Insertion Length L | | H | |
|-------------------------------------|------------|-----------|------|-------|------|-------|--------------------------|------|------|------|
| | | | inch | mm | inch | mm | inch | mm | inch | mm |
| Female ORS Swivel, Straight | | | | | | | | | | |
| 1EA12FR12 | 1 3/16-12 | -12 | 3.77 | 95.9 | 2.00 | 50.9 | 1.77 | 45.0 | | |
| 1EA16FR12 | 1 7/16-12 | -12 | 3.33 | 84.6 | 1.56 | 39.6 | 1.77 | 45.0 | | |
| 1EA16FR16 | 1 7/16-12 | -16 | 4.71 | 119.5 | 2.15 | 54.5 | 2.56 | 65.0 | | |
| 1ZA16FR16 | 1 7/16-12 | -16 | 4.71 | 119.5 | 2.15 | 54.5 | 2.56 | 65.0 | | |
| 1EA20FR16 | 1 11/16-12 | -16 | 4.19 | 106.4 | 1.63 | 41.4 | 2.56 | 65.0 | | |
| 1EA20FR20 | 1 11/16-12 | -20 | 5.38 | 136.7 | 2.43 | 61.7 | 2.95 | 75.0 | | |
| 1ZA20FR16 | 1 11/16-12 | -16 | 4.19 | 106.4 | 1.63 | 41.4 | 2.56 | 65.0 | | |
| 1ZA20FR20 | 1 11/16-12 | -20 | 5.38 | 136.7 | 2.43 | 61.7 | 2.95 | 75.0 | | |
| 1EA24FR24 | 2-12 | -24 | 5.00 | 126.9 | 1.93 | 48.9 | 3.07 | 78.0 | | |
| 1ZA24FR24 | 2-12 | -24 | 5.00 | 126.9 | 1.93 | 48.9 | 3.07 | 78.0 | | |
| Female ORS Swivel, 45° elbow | | | | | | | | | | |
| 1EA12FRA12 | 1 3/16-12 | -12 | 4.68 | 118.9 | 2.91 | 73.9 | 1.77 | 45.0 | 0.94 | 24.0 |
| 1EA16FRA12 | 1 7/16-12 | -12 | 5.05 | 128.4 | 3.28 | 83.4 | 1.77 | 45.0 | 1.10 | 28.0 |
| 1EA16FRA16 | 1 7/16-12 | -16 | 6.04 | 153.4 | 3.48 | 88.4 | 2.56 | 65.0 | 1.10 | 28.0 |
| 1ZA16FRA16 | 1 7/16-12 | -16 | 6.04 | 153.4 | 3.48 | 88.4 | 2.56 | 65.0 | 1.10 | 28.0 |
| 1EA20FRA16 | 1 11/16-12 | -16 | 6.45 | 163.9 | 3.89 | 98.9 | 2.56 | 65.0 | 1.22 | 31.0 |
| 1EA20FRA20 | 1 11/16-12 | -20 | 7.08 | 179.8 | 4.13 | 104.8 | 2.95 | 75.0 | 1.22 | 31.0 |
| 1ZA20FRA16 | 1 11/16-12 | -16 | 6.45 | 163.9 | 3.89 | 98.9 | 2.56 | 65.0 | 1.22 | 31.0 |
| 1ZA20FRA20 | 1 11/16-12 | -20 | 7.08 | 179.8 | 4.13 | 104.8 | 2.95 | 75.0 | 1.22 | 31.0 |
| Female ORS Swivel, 90° elbow | | | | | | | | | | |
| 1EA12FRB12 | 1 3/16-12 | -12 | 4.51 | 114.5 | 2.74 | 69.5 | 1.77 | 45.0 | 2.28 | 58.0 |
| 1EA16FRB12 | 1 7/16-12 | -12 | 4.94 | 125.6 | 3.17 | 80.6 | 1.77 | 45.0 | 2.80 | 71.0 |
| 1EA16FRB16 | 1 7/16-12 | -16 | 5.93 | 150.6 | 3.37 | 85.6 | 2.56 | 65.0 | 2.80 | 71.0 |
| 1ZA16FRB16 | 1 7/16-12 | -16 | 5.93 | 150.6 | 3.37 | 85.6 | 2.56 | 65.0 | 2.80 | 71.0 |
| 1EA20FRB16 | 1 11/16-12 | -16 | 6.45 | 163.7 | 3.89 | 98.7 | 2.56 | 65.0 | 3.07 | 78.0 |
| 1EA20FRB20 | 1 11/16-12 | -20 | 7.07 | 179.6 | 4.12 | 104.6 | 2.95 | 75.0 | 3.07 | 78.0 |
| 1ZA20FRB16 | 1 11/16-12 | -16 | 6.45 | 163.7 | 3.89 | 98.7 | 2.56 | 65.0 | 3.07 | 78.0 |
| 1ZA20FRB20 | 1 11/16-12 | -20 | 7.07 | 179.6 | 4.12 | 104.6 | 2.95 | 75.0 | 3.07 | 84.0 |

JIC FITTINGS

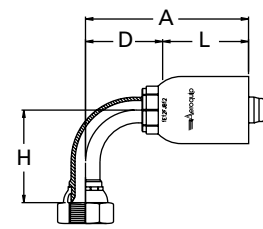
Global Spiral TTC™ Fittings for use with hose: FC254, FC273, FC273B, FC606, FC606B, GH466, GH506
 1E Fittings for use on 4 wire construction
 1Z Fittings for use on 6 wire construction



SAE 37° (JIC) Swivel
Straight



SAE 37° (JIC) Swivel
45° Elbow



SAE 37° (JIC) Swivel
90° Elbow

| Fitting Part Number | Thread | Hose Size | A | | D | | Insertion Length L | | H | |
|--|-----------|-----------|------|-------|------|-------|--------------------------|------|------|-------|
| | | | inch | mm | inch | mm | inch | mm | inch | mm |
| SAE 37° (JIC) Swivel, straight | | | | | | | | | | |
| 1EA12FJ12 | 1 1/16-12 | -12 | 4.10 | 104.2 | 2.33 | 59.2 | 1.77 | 45.0 | | |
| 1EA16FJ12 | 1 5/16-12 | -12 | 4.20 | 106.6 | 2.43 | 61.6 | 1.77 | 45.0 | | |
| 1EA16FJ16 | 1 5/16-12 | -16 | 5.19 | 131.8 | 2.63 | 66.8 | 2.56 | 65.0 | | |
| 1ZA16FJ16 | 1 5/16-12 | -16 | 5.19 | 131.8 | 2.63 | 66.8 | 2.56 | 65.0 | | |
| 1EA20FJ16 | 1 5/8-12 | -16 | 5.26 | 133.7 | 2.70 | 68.7 | 2.56 | 65.0 | | |
| 1EA20FJ20 | 1 5/8-12 | -20 | 5.89 | 149.7 | 2.94 | 74.7 | 2.95 | 75.0 | | |
| 1ZA20FJ20 | 1 5/8-12 | -20 | 5.89 | 149.7 | 2.94 | 74.7 | 2.95 | 75.0 | | |
| 1EA24FJ20 | 1 7/8-12 | -20 | 6.59 | 167.5 | 3.64 | 92.5 | 2.95 | 75.0 | | |
| 1ZA24FJ20 | 1 7/8-12 | -20 | 6.59 | 167.5 | 3.64 | 92.5 | 2.95 | 75.0 | | |
| 1EA24FJ24 | 1 7/8-12 | -24 | 6.75 | 171.5 | 3.68 | 93.5 | 3.07 | 78.0 | | |
| 1ZA24FJ24 | 1 7/8-12 | -24 | 6.75 | 171.5 | 3.68 | 93.5 | 3.07 | 78.0 | | |
| 1EA32FJ32 | 2 1/2-12 | -32 | 7.32 | 186.0 | 4.25 | 108.0 | 3.07 | 78.0 | | |
| 1ZA32FJ32 | 2 1/2-12 | -32 | 7.32 | 186.0 | 4.25 | 108.0 | 3.07 | 78.0 | | |
| SAE 37° (JIC) Swivel, 45° elbow | | | | | | | | | | |
| 1EA12FJA12 | 1 1/16-12 | -12 | 4.80 | 121.9 | 3.03 | 76.9 | 1.77 | 45.0 | 1.06 | 27.0 |
| 1EA16FJA12 | 1 5/16-12 | -12 | 5.25 | 133.4 | 3.48 | 88.4 | 1.77 | 45.0 | 1.30 | 33.0 |
| 1EA16FJA16 | 1 5/16-12 | -16 | 6.25 | 158.6 | 3.69 | 93.6 | 2.56 | 65.0 | 1.30 | 33.0 |
| 1EA20FJA16 | 1 5/8-12 | -16 | 6.70 | 170.2 | 4.14 | 105.2 | 2.56 | 65.0 | 1.46 | 37.0 |
| 1EA20FJA20 | 1 5/8-12 | -20 | 7.33 | 186.2 | 4.38 | 111.2 | 2.95 | 75.0 | 1.46 | 37.0 |
| 1ZA20FJA20 | 1 5/8-12 | -20 | 7.33 | 186.2 | 4.38 | 111.2 | 2.95 | 75.0 | 1.46 | 37.0 |
| 1EA24FJA24 | 1 7/8-12 | -24 | 8.20 | 208.2 | 5.13 | 130.2 | 3.07 | 78.0 | 1.69 | 43.0 |
| 1ZA24FJA24 | 1 7/8-12 | -24 | 8.20 | 208.2 | 5.13 | 130.2 | 3.07 | 78.0 | 1.69 | 43.0 |
| SAE 37° (JIC) Swivel, 90° elbow | | | | | | | | | | |
| 1EA12FJB12 | 1 1/16-12 | -12 | 4.51 | 114.5 | 2.74 | 69.5 | 1.77 | 45.0 | 2.28 | 58.0 |
| 1EA16FJB12 | 1 5/16-12 | -12 | 4.94 | 125.6 | 3.17 | 80.6 | 1.77 | 45.0 | 2.80 | 71.0 |
| 1EA16FJB16 | 1 5/16-12 | -16 | 5.94 | 150.8 | 3.38 | 85.8 | 2.56 | 65.0 | 2.80 | 71.0 |
| 1EA20FJB16 | 1 5/8-12 | -16 | 6.45 | 163.9 | 3.89 | 98.9 | 2.56 | 65.0 | 3.23 | 82.0 |
| 1EA20FJB20 | 1 5/8-12 | -20 | 7.08 | 179.9 | 4.13 | 104.9 | 2.95 | 75.0 | 3.23 | 82.0 |
| 1ZA20FJB20 | 1 5/8-12 | -20 | 7.08 | 179.9 | 4.13 | 104.9 | 2.95 | 75.0 | 3.23 | 82.0 |
| 1EA24FJB24 | 1 7/8-12 | -24 | 8.07 | 205.1 | 5.00 | 127.1 | 3.07 | 78.0 | 4.09 | 104.0 |
| 1ZA24FJB24 | 1 7/8-12 | -24 | 8.07 | 205.1 | 5.00 | 127.1 | 3.07 | 78.0 | 4.09 | 104.0 |

GLOBAL SPIRAL TTC CRIMP FITTINGS

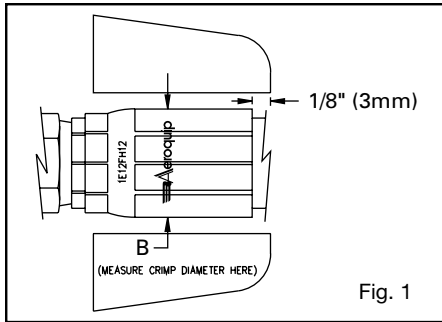


Fig. 1

Note: These target settings for Aeroquip crimp machines are provided to aid in establishing actual settings. While the settings on this chart will give crimp diameters close to, or at the specified value, the machine operator must check to verify the actual diameter. Before using these target settings, the crimp machine must be properly calibrated. Consult your Aeroquip equipment manual for calibration procedures.

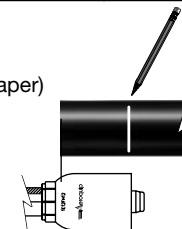
1Z Prefixed fittings are for use on 6 wire spiral construction.

1E Prefixed fittings are for use on 4 wire spiral construction.

| Hose Dash Size | Fitting Part Number Prefix | Crimp Diameter "B" ± 0.15mm ± .006 in | Crimp Cage | Fig. | FT1209 and FT1307 Target Settings | FT1340 and FT1360 Target Settings | FT1390 Target Setting | GT9050 Die Number | GT9050 Target Setting |
|-------------------------|----------------------------|---|---------------|------|-----------------------------------|-----------------------------------|-----------------------|-------------------|-----------------------|
| FC254 | | | | | | | | | |
| -12 | 1E12 | 36.5 1.437 | FT1209-200-82 | 1 | 0.552 | 756 | 281 | M360 | 064 |
| -16 | 1E16 | 45.4 1.787 | FT1209-200-46 | 1 | 0.655 | 815 | 252 | M450 | 050 |
| -20 | 1E20 | 53.2 2.094 | FT1209-200-14 | 1 | 0.023 | 453 | 430 | M510 | 220 |
| -24 | 1E24 | 61.2 2.409 | FT1390-200-20 | 1 | 0.325 | 626 | 345 | | |
| -32 | 1E32 | 73.6 2.898 | FT1390-200-23 | 1 | 0.467 | 707 | 305 | | |
| FC273 and FC273B | | | | | | | | | |
| -12 | 1E12 | 36.7 1.445 | FT1209-200-82 | 1 | 0.524 | 740 | 289 | M360 | 084 |
| -16 | 1E16 | 45.4 1.787 | FT1209-200-46 | 1 | 0.655 | 815 | 252 | M450 | 050 |
| -20 | 1Z20 | 57.1 2.248 | FT1209-200-15 | 1 | 0.328 | 628 | 344 | M550 | 204 |
| -24 | 1Z24 | 64.1 2.524 | FT1390-200-16 | 1 | 0.382 | 658 | 329 | | |
| -32 | 1Z32 | 79.1 3.114 | FT1390-200-21 | 1 | 0.417 | 679 | 319 | | |
| FC606 and FC606B | | | | | | | | | |
| -16 | 1Z16 | 49.1 1.933 | FT1209-200-46 | 1 | 0.108 | 502 | 406 | M480 | 100 |
| -20 | 1Z20 | 56.2 2.213 | FT1209-200-15 | 1 | 0.470 | 709 | 304 | M550 | 120 |
| -24 | 1Z24 | 64.1 2.525 | FT1390-200-16 | 1 | 0.376 | 654 | 330 | M550 | 120 |
| GH466 | | | | | | | | | |
| -20 | 1Z20 | 56.9 2.240 | FT1209-200-15 | 1 | 0.371 | 652 | 332 | M550 | 184 |
| -24 | 1Z24 | 64.3 2.531 | FT1390-200-16 | 1 | 0.343 | 636 | 340 | | |
| GH506 | | | | | | | | | |
| -12 | 1E12 | 36.2 1.425 | FT1209-200-82 | 1 | 0.595 | 780 | 269 | M360 | 034 |
| -16 | 1E16 | 44.9 1.768 | FT1209-200-46 | 1 | 0.726 | 855 | 232 | M420 | 272 |
| -20 | 1E20 | 53.5 2.106 | FT1209-200-14 | 1 | 0.059 | 474 | 420 | M510 | 250 |
| -24 | 1E24 | 60.4 2.378 | FT1390-200-20 | 1 | 0.453 | 699 | 309 | | |
| -32 | 1E32 | 73.6 2.898 | FT1390-200-23 | 1 | 0.467 | 707 | 305 | | |

Assembly Instructions

- Cut hose to proper length by subtracting appropriate fitting "D" dimensions from overall assembly length.
 - To determine hose insertion length (L), align end of hose to top of stenciled part number (located on the socket taper) and mark hose where the socket ends.
 - Install fittings onto hose until socket edge aligns with mark.
- Select proper crimp cage and machine settings, then crimp to specified diameter.
 - To achieve full flat crimp locate back edge of socket approximately 1/8" (3mm) from back edge of crimp jaws as shown in figure 1.



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Printed in USA
Document No. A-MEFI-MC001-E
Supersedes JA755
January 2003