ENGINEERING
TOMORROW

Synflex Optimum by Danfoss - EMEA

Design **reimagined**

Thermoplastic hydraulic hose and fittings

Synflex Optimum
by Danfoss

www.danfoss.com

Empowering without limitations

Higher performing. More configurations.

Synflex Optimum by Danfoss' thermoplastic hydraulic hoses and fittings empower OEMs to reimagine design. Our system engineered portfolio offers streamlined product configurations that make it easy to find the perfect combination for every application. Our commitment to innovation includes the design and technical support needed to develop more efficient, safe, and productive systems.

R7 | **R8** | **R18**

37B0 / 3TR7 / 3TR7N Non-conductive

3TR8 / 3TR8N Non-conductive

3TB0 / 3TR18CT

UV / Ozone protection

The thermoplastic polyurethane and polyester outer-cover resists ozone, ultraviolet light, and aging

Easier routing and installation

Reformulated nonstick cover requires 50% less routing force, improved kink resistance, and compact fittings for improved routing

Temperature resistance

Improved hose functionality over a wide temperature range from -40 °C (-40 °F) to +100 °C (+212 °F)

Custom thermoforming

Ability to mold into configurations that match system design

Higher abrasion resistance

The new TPU and polyester cover increases abrasion resistant by 10%

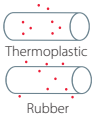
Powerful performance

Lift and handle heavy loads with hose power ranges extending from 70 bar to 350 bar

Longer Lasting

Abrasion resistance improvement of 10% that exceeds the requirements set by forklift and telehandler manufacturers

Permeation resistance



Thermoplastic hose deliver better permeation resistance against gases compared to rubber hoses

Chemical resistance

Thermoplastic composition paired with nylon lining prevents absorption of most oils and hydraulic fluids

Flexible design

Lightweight hose design drives performance efficiencies, reducing vehicle power requirements

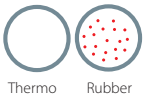
Lighter weight

Synthetic reinforced thermoplastic hoses are about 2x lighter then equivalent wire-braided rubber hoses

Bonding capabilities

Synflex thermoplastic hoses can be permanently joined without the use of any mechanical devices

System cleanliness



Thermoplastic hose will not degrade or create contaminants in filters and valves helping you maintain a clean system

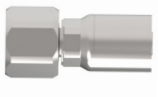
Noise reduction

Special reinforcements on the thermoplastic hoses help reduce machine noise

Long lengths

Synflex thermoplastic hoses can be manufactured in longer lengths compared to rubber wire braided hoses-up to 500 m for large ID and up to 1,500 m for smaller sizes. Longer lengths mean less scrap and less coupling junctions

Fittings



R7 R8 R18

4T series

The optimized one-piece fitting crimps directly to Synflex R7, R8, and R18 hoses for the most robust economic connection

R7 R8

TTC / Z series (with sleeve)

Leverage Danfoss' bestselling or existing high volume fitting on R7 and R8 hoses by adding a sleeve

R18

9MN

One - piece fittings for use with Synflex 37B0/3TB0 hoses

3TR7

3TR7N Non-conductive

92.2 ANSI (-4 thru -10)

Part #	Hose I.D.		Hose O.D. (nominal)		Working Pressure				Min. Burst Pressure		Min. Bend Radius		Weight	
					SAE		ANSI							
	mm	in	mm	in	bar	psi	bar	psi	bar	psi	mm	in	kg/m	lbs/ft
3TR7-02	3,2	0.12	8,5	0.33	210	3050			840	12200	12,7	0.50	0,04	0.03
3TR7-03 3TR7N-03	4,8	0.19	10,8	0.43	210 210	3050 3050	210	3050	840	12200	19,0	0.75	0,07	0.05
3TR7-04 3TR7N-04	6,4	0.25	12,5	0.49	210 210	3050 3050	210	3050	759	11000	31,8	1.25	0,09	0.06
3TR7-05 3TR7N-05	7,9	0.31	14,6	0.57	175 175	2550 2550	207	3000	690	10000	38,1	1.50	0,13	0.08
3TR7-06 3TR7N-06	9,8	0.39	16,5	0.65	157 157	2300 2300	207	3000	621	9000	50,8	2.00	0,15	0.10
3TR7-08 3TR7N-08	12,7	0.50	20,8	0.82	140 140	2050 2050	207	3000	621	9000	69,9	2.75	0,21	0.14
3TR7-10 3TR7N-10	16,0	0.63	23,6	0.93	105 105	1525 1525	140	2050	421	6100	101,6	4.00	0,24	0.16
3TR7-12 3TR7N-12	19,0	0.75	26,4	1.04	86 86	1250 1250			348	5000	127,0	5.00	0,26	0.17
3TR7-16 3TR7N-16	25,4	1.00	33,7	1.33	69 69	1000 1000			280	4000	190,5	7.50	0,40	0.27

Operating temperature

For oil-based fluids: -40 °C to +100 °C (-40 °F to +212 °F)

For water-based fluids: -40 °C to +66 °C (-40 °F to +150 °F)

3TR7 supersedes

3130, 3160, 3DH0, 3CH0

3TR7N supersedes

3740, 37AL

Approved fittings

4T series

1A/Z series with sleeve (FF91064)

Inner tube

Nylon

Reinforcement

1 textile braid

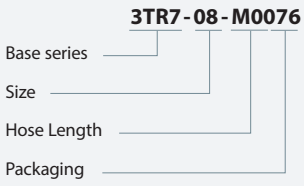
Cover

Nonstick polyurethane

Typical platforms

- Material handling
- Agriculture
- Horticulture
- Chemical transfer
- Foam system
- Food processing
- Forestry delimber
- General construction
- General hydraulic systems
- Lubrication systems
- Marine steering
- Utility vehicles and pickers
- Rescue apparatus and tools
- Water jetter drain/sewer

How to order/ part # structure



M0076C: continuous, exact length in one continuous piece

M0076: 1 to 2 pieces, each piece 6.5 meters minimum

37B0

Part #	Hose I.D.			Hose O.D. max		Max Operating Pressure		Burst Pressure		Min. Bend Radius		Weight	
	DN	mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lbs/ft
37B0-03	5	4.8	0.19	10.8	0.43	165	2390	660	9560	20	0.79	0.10	0.07
37B0-04	6	6.4	0.25	13.1	0.52	175	2535	700	10140	32	1.26	0.14	0.09
37B0-05	8	7.9	0.31	14.9	0.59	155	2250	620	9000	45	1.77	0.14	0.09
37B0-06	10	9.5	0.37	16.6	0.65	155	2250	620	9000	51	2.01	0.17	0.11

Operating temperature

-54 °C to +100 °C (-65 °F to +212 °F)

Approved fittings

4T series

Inner tube

Polyurethane

Reinforcement

1 textile braid

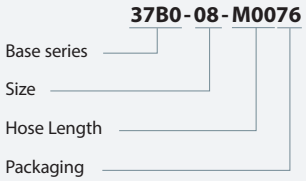
Cover

Black polyester

Typical platforms

- Forklift working in cold storage areas
- Material handling
- Agriculture
- Chemical transfer
- Foam systems
- Food processing
- Forestry delimber
- General hydraulic systems
- Lubrication systems
- Marine steering
- Utility vehicles and pickers
- Rescue apparatus and tools
- Water jetter drain/sewer

How to order/ part # structure



M0076C: continuous, exact length in one continuous piece

M0076: 1 to 2 pieces, each piece 6.5 meters minimum

3TR8

3TR8N Non-conductive

Part #	Hose I.D.		Hose O.D. (nominal)		Working Pressure		Min. Burst Pressure		Min. Bend Radius		Weight	
	mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lbs/ft
3TR8-04 3TR8N-04	6,4	0.25	15,0	0.59	350	5100	1400	20400	38,1	1.50	0,16	0.11
3TR8-06 3TR8N-06	9,5	0.38	19,0	0.75	280	4500	1120	16200	57,2	2.25	0,23	0.15
3TR8-08 3TR8N-08	12,7	0.50	22,8	0.90	245	3550	980	14200	76,2	3.00	0,29	0.20
3TR8-12 3TR8N-12	19,0	0.75	28,8	1.13	157	2300	628	9200	114,3	4.50	0,38	0.25
3TR8-16 3TR8N-16	25,4	1.00	36,2	1.43	140	2050	560	8200	196,9	7.75	0,57	0.38

Inner tube

Nylon

Reinforcement

2 textile braid

Cover

Nonstick polyurethane

Typical platforms

- Material handling
- Air tools
- Cooling/misting/dust suppression
- Forestry delimber
- General construction
- General hydraulic
- High pressure chemical transfer
- Marine steering
- Mobile machinery
- Utility vehicles
- Recreational vehicles
- Rescue tools and equipment

Operating temperature

For oil-based fluids: -40 °C to +100 °C (-40 °F to +212 °F)

For water-based fluids: -40 °C to +66 °C (-40 °F to +150 °F)

3TR8 supersedes

3R80 and 3800

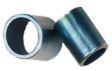
3TR8N supersedes

3E80

Approved fittings

4T series

TTC/Z series with sleeve (FF91064)



How to order/ part # structure

3TR8 - 08 - M0076

- Base series
- Size
- Hose Length
- Packaging

M0076C: continuous, exact length in one continuous piece

M0076: 1 to 2 pieces, each piece 6.5 meters minimum

3TB0

Part #	Hose I.D.			Hose O.D. max		Max Operating Pressure		Burst Pressure		Min. Bend Radius		Weight	
	DN	mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lbs/ft
3TB0-06	10	9.7	0.37	17.0	0.67	270*	3920	840	15680	52	2.05	0.18	0.12
3TB0-08	12	13.0	0.50	21.6	0.85	270*	3920	840	15680	89	3.50	0.25	0.17
3TB0-10	16	16.2	0.63	27.0	1.06	270*	3920	840	15680	102	4.00	0.41	0.28

** 270 bar operating pressure possible with 3:1 safety factor*

Operating temperature

-40 °C to +93 °C (-40 °F to +200 °F)

Approved fittings


4T series


9MN

Inner tube
Polyester lined

Reinforcement
2 textile braid

Cover
Nonstick perforated polyurethane

Typical platforms

- Telehandler (telescopic boom)
- Forklifts
- Material handling
- Agriculture
- Chemical transfer
- Foam systems
- Food processing
- Forestry delimber
- General hydraulic systems
- Lubrication systems
- Marine steering
- Utility vehicles and pickers
- Rescue apparatus and tools
- Water jetter drain/sewer

How to order/ part # structure

37B0-08-M0076

- Base series
- Size
- Hose Length
- Packaging

M0076C: continuous, exact length in one continuous piece

M0076: 1 to 2 pieces, each piece 6.5 meters minimum

3TR18CT

Part #	Hose I.D.		Hose O.D. (nominal)		Working Pressure		Min. Burst Pressure		Min. Bend Radius		Weight	
	mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lbs/ft
3TR18CT-04	6,4	0.25	12,2	0.48	210	3050	840	12200	31,8	1.25	0,09	0.06
3TR18CT-05	7,9	0.31	14,8	0.58	210	3050	840	12200	38,1	1.50	0,15	0.10
3TR18CT-06	9,5	0.38	16,8	0.66	210	3050	840	12200	50,8	2.00	0,16	0.11
3TR18CT-08	12,7	0.50	21,6	0.85	210	3050	840	12200	69,9	2.75	0,25	0.17
3TR18CT-10	15,9	0.62	26,8	1.06	210	3050	840	12200	101,6	4.00	0,41	0.28

Operating temperature

For oil-based fluids: -54 °C to +94 °C (-65 °F to +200 °F)

For water-based fluids: -54 °C to +66 °C (-65 °F to +150 °F)

Approved fittings

4TA series

3TR18CT supersedes

30CT

Inner tube

Polyester

Reinforcement

2 textile braid

Cover

Nonstick polyester

3TR18CT perforated

Typical platforms

- Agriculture
- Horticulture
- Chemical and gas transfer
- Forestry delimber
- Forklifts
- Freezer applications
- General construction
- General hydraulics
- Lubrication systems
- Machine tools and robotics
- Portable hydraulic tools

How to order/ part # structure

3TR18CT - 08 - 250 BX

- Base series
- Size
- Hose Length
- Packaging

BC: continuous length in box

BX: 2 lengths per box, no length less than 20 ft.

RL: random length reel, 2 lengths per reel, no length less than 20 ft.

R: continuous length on reel

3TR7 Twin-line

How to order/part # structure

3TR7 - 08 - 2 - M0076

- Base series
- Size
- Number of hoses
- Hose length
- Packaging

Part #	Hose Series	Number of hoses	Hose I.D.		Hose O.D.		Working Pressure		Min. Burst Pressure		Min. Bend Radius		Weight	
			mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lbs/ft
3TR7-04-2-M0076	3TR7	2	6,4	0.25	12,5	0.49	192	2800	759	11000	31,8	1.25	0,09	0.06
3TR7-05-2-M0076	3TR7	2	7,9	0.31	14,6	0.57	175	2550	690	10000	38,1	1.50	0,13	0.08
3TR7-06-2-M0076	3TR7	2	9,5	0.38	16,5	0.65	157	2300	621	9000	50,8	2.00	0,15	0.10
3TR7-08-2-M0076	3TR7	2	12,7	0.50	20,8	0.82	140	2050	621	9000	69,9	2.75	0,21	0.14

3TR7N Twin-Line Non-conductive

92.2 ANSI (-4 thru -10)

Part #	Hose Series	Number of hoses	Hose I.D.		Hose O.D.		Working Pressure				Min. Burst Pressure		Min. Bend Radius		Weight	
							SAE		ANSI							
			mm	in	mm	in	bar	psi	bar	psi	bar	psi	mm	in	kg/m	lbs/ft
3TR7N-04-2-M0076	3TR7	2	6,4	0.25	12,5	0.49	192	2800	207	11000	759	11000	31,8	1.25	0,09	0.06
3TR7N-06-2-M0076	3TR7	2	9,5	0.38	16,5	0.65	175	2550	207	9000	621	9000	50,8	2.00	0,15	0.10
3TR7N-08-2-M0076	3TR7	2	12,7	0.50	20,8	0.82	175	2300	207	9000	621	9000	69,9	2.75	0,21	0.14

3TB0 Constant pressure hose

Part #	Hose size	Number of hoses	Hose I.D.		Length
			mm	in	meters
3TB0-06-2-M0075C	3TB0-06	2	9.7	0.37	75
3TB0-08-2-M0075C	3TB0-08	2	13.0	0.50	75
3TB0-10-2-M0075C	3TB0-10	2	16.2	0.63	75

** Contact Danfoss customer service for twin-line, tri-line, and multi-line configuration options.*

37B0 Medium pressure hose

Part #	Hose size	Number of hoses	Hose I.D.		Length
			mm	in	meters
37B0-03-2-M0075C	37B0-03	2	4.8	0.19	75
37B0-04-2-M0075C	37B0-04	2	6.4	0.25	75
37B0-05-2-M0075C	37B0-05	2	7.9	0.31	75
37B0-06-2-M0075C	37B0-06	2	9.5	0.37	75

** Contact Danfoss customer service for twin-line, tri-line, and multi-line configuration options.*

Designed for efficiency

Over 500+ combinations of terminal ends

Best-in-class features come standard

Seamless compatibility

Synflex Optimum fittings are optimized to work together with Synflex Optimum thermoplastic hydraulic hoses

Single piece design

Synflex Optimum 4TA fittings follow a simple one-piece design that reduces matching errors during assembly, eliminates brazing failure risks, and lowers assembly time

Captive nut

A captive nut eliminates the weak spots found in other fittings and it evenly distributes the force applied during assembly, helping prevent cracks and leaks that halt workflows and lead to unplanned downtime

Easy assembly

Easier insertion, less force needed during assembly to push fitting onto hose

More configurations

Over 500+ combinations of terminal ends

Designed for ease of use

Smaller profile

They have a compact design and smaller profile making it easier for routing and assembly installation, especially in tight spaces

Easy identification

Part numbers printed on fittings for easy identification

Designed to last

Corrosion resistance

Dura-Kote™ plating comes standard in our Synflex Optimum fittings. Dura-Kote plating delivers up 3x the corrosion protection on carbon steel fittings as compared to competitive hose fittings and provides up to 1,000 hours of corrosion resistance. This is a huge step forward in metal fitting corrosion protection.

Corrosion comparison after 650 hours of exposure to salt spray testing

4T fittings numbering system

Complete nipple part number: 4T 12 FJ A 16 __

Product Group

4T = one piece non-skive braided fitting

Terminal end connection size*

Terminal end connection code

BG = BSP 60° (swivel) with O-ring (BS5200)
CB = SAE 37° male flare bulkhead (with jam nut)
FJ = SAE JIC 37° female swivel
FP = NPTF female pipe
FR = ORS female swivel
MB = Male o-ring boss (ORB)
MJ = SAE JIC 37° male rigid
MP = Male pipe rigid
NR = ORS female with non-slide back nut
PF = Female pipe swivel
PS = Male pipe swivel
SP = NPSM female pipe swivel

Terminal end connecting configuration

If nipple has a straight configuration, then this position collapses

A = 45°
B = 90°, standard or short drop
C = 90° long drop
D = 22 1/2°
E = 67 1/2°
F = 30°
G = 60°
H = 110°

Hose size*

Material designation

BA = stainless steel, if fitting is zinc plated carbon steel (standard), this position collapses.

** When ordering sizes 3, 4, 5, 6 and 8 the part number requires only single digits*

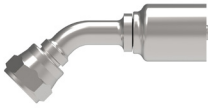
BF

BSP female swivel

Part #	Thread	Hose size
4T4BF4	G 1/4	-4
4T6BF4	G 3/8	-4
4T6BF5	G 3/8	-5
4T6BF6	G 3/8	-6
4T8BF6	G 1/2	-6
4T8BF8	G 1/2	-8
4T10BF8	G 5/8	-8
4T12BF8	G 3/4	-8
4T10BF10	G 5/8	-10
4T12BF10	G 3/4	-10
4T12BF12	G 3/4	-12
4T16BF16	G 1	-16

BFA

BSP female swivel, 45° elbow



Part #	Thread	Hose size
4T4BFA4	G 1/4	-4
4T6BFA4	G 3/8	-4
4T6BFA5	G 3/8	-5
4T6BFA6	G 3/8	-6
4T8BFA6	G 1/2	-6
4T8BFA8	G 1/2	-8
4T10BFA8	G 5/8	-8
4T12BFA8	G 3/4	-8
4T10BFA10	G 5/8	-10
4T12BFA10	G 3/4	-10
4T12BFA12	G 3/4	-12
4T16FJB16	G 1	-16

BFB

BSP female swivel, 90° elbow

Part #	Thread	Hose size
4T4BFB4	G 1/4	-4
4T6BFB4	G 3/8	-4
4T6BFB5	G 3/8	-5
4T6BFB6	G 3/8	-6
4T8BFB6	G 1/2	-6
4T8BFB8	G 1/2	-8
4T10BFB8	G 5/8	-8
4T12BFB8	G 3/4	-8
4T10BFB10	G 5/8	-10
4T12BFB10	G 3/4	-10
4T12BFB12	G 3/4	-12
4T16BFB16	G 1	-16

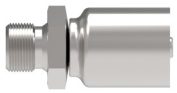
BJ

Banjo, DIN 7642

Part #	Thread	Hose size
4T6BJ4		-4
4T8BJ5		-5
4T8BJ6		-6
4T10BJ6		-6
4T12BJ6		-6
4T12BJ8		-8
4T16BJ10		-10
4T20BJ12		-12
4T25BJ16		-16

BP

BSP male parallel



Part #	Thread	Hose size
4T4BP4	G 1/4	-4
4T4BP5	G 1/4	-5
4T6BP6	G 3/8	-6
4T8BP6	G 1/2	-6
4T8BP8	G 1/2	-8
4T10BP10	G 5/8	-10
4T12BP12	G 3/4	-12
4T16BP16	G 1	-16

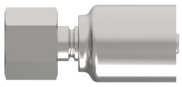
DK

24° male, light duty

Part #	Thread	Hose size
4T5DK3	M12X1.5	-3
4T6DK4	M14X1.5	-4
4T8DK5	M16X1.5	-5
4T10DK5	M18X1.5	-5
4T8DK6	M16X1.5	-6
4T10DK6	M18X1.5	-6
4T12DK6	M22X1.5	-6
4T10DK8	M18X1.5	-8
4T12DK8	M22X1.5	-8
4T16DK10	M26X1.5	-10
4T20DK12	M30X2	-12
4T25DK16	M36X2	-16

DL

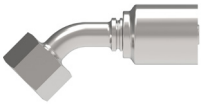
DKO female swivel, light duty



Part #	Thread	Hose size
4T5DL3	M12X1.5	-3
4T5DL4	M12X1.5	-4
4T6DL4	M14X1.5	-4
4T8DL4	M16X1.5	-4
4T8DL5	M16X1.5	-5
4T10DL5	M18X1.5	-5
4T8DL6	M16X1.5	-6
4T10DL6	M18X1.5	-6
4T12DL6	M22X1.5	-6
4T10DL8	M18X1.5	-8
4T12DL8	M22X1.5	-8
4T16DL8	M26X1.5	-8
4T12DL10	M22X1.5	-10
4T16DL10	M26X1.5	-10
4T20DL12	M30X2	-12
4T25DL16	M30X2	-12

DLA

DKO female swivel, light duty, 45° elbow



Part #	Thread	Hose size
4T5DLA3	M12X1.5	-3
4T5DLA4	M12X1.5	-4
4T6DLA4	M14X1.5	-4
4T8DLA5	M16X1.5	-5
4T8DLA6	M16X1.5	-6
4T10DLA6	M18X1.5	-6
4T12DLA8	M22X1.5	-8
4T16DLA10	M26X1.5	-10
4T16DLA12	M26X1.5	-12
4T25DLA16	M36X2	-16

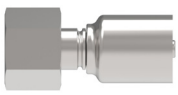
DLB

DKO female swivel, light duty, 90° elbow

Part #	Thread	Hose Size
4T5DLB3	M12X1.5	-3
4T5DLB4	M12X1.5	-4
4T6DLB4	M14X1.5	-4
4T8DLB5	M16X1.5	-5
4T8DLB6	M16X1.5	-6
4T10DLB6	M18X1.5	-6
4T12DLB8	M22X1.5	-8
4T16DLB10	M26X1.5	-10
4T16DLB12	M26X1.5	-12
4T25DLB16	M36X2	-16

DS

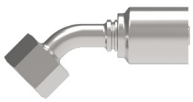
DKO female swivel, heavy duty



Part #	Thread	Hose size
4T5DS3	M16X1.5	-3
4T5DS4	M16X1.5	-4
4T6DS4	M18X1.5	-4
4T6DS5	M18X1.5	-5
4T8DS5	M20X1.5	-5
4T8DS6	M20X1.5	-6
4T10DS6	M22X1.5	-6
4T10DS8	M22X1.5	-8
4T12DS8	M24X1.5	-8
4T16DS10	M30X2	-10
4T20DS12	M36X2	-12
4T25DS16	M42X2	-16

DSA

DKO female swivel, heavy duty, 45° elbow



Part #	Thread	Hose size
4T5DSA3	M16X1.5	-3
4T5DSA4	M16X1.5	-4
4T6DSA4	M18X1.5	-4
4T6DSA5	M18X1.5	-5
4T8DSA5	M20X1.5	-5
4T8DSA6	M20X1.5	-6
4T10DSA6	M22X1.5	-6
4T12DSA8	M24X1.5	-8
4T16DSA10	M30X2	-10
4T20DSA12	M36X2	-12
4T25DSA16	M42X2	-16

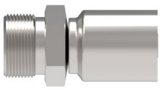
DSB

DKO female swivel, heavy duty, 90° elbow

Part #	Thread	Hose size
4T5DSB3	M16X1.5	-3
4T5DSB4	M16X1.5	-4
4T6DSB4	M18X1.5	-4
4T6DSB5	M18X1.5	-5
4T8DSB5	M20X1.5	-5
4T8DSB6	M20X1.5	-6
4T10DSB6	M22X1.5	-6
4T12DSB8	M24X1.5	-8
4T16DSB10	M30X1.5	-10
4T20DSB12	M36X1.5	-12
4T25DSB16	M42X1.5	-16

EK

24° male, heavy duty



Part #	Thread	Hose size
4T6EK4	M18X1.5	-4
4T6EK5	M18X1.5	-5
4T8EK5	M20X1.5	-5
4T8EK6	M20X1.5	-6
4T10EK6	M22X1.5	-6
4T12EK8	M24X1.5	-8
4T16EK10	M30X2	-10
4T20EK12	M36X2	-12
4T25EK16	M42X2	-16

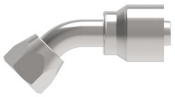
FJ

JIC/37° female swivel

Part #	Thread	Hose Size
4T3FJ4	3/8-24	-04
4T5FJ4	1/2-20	-04
4T6FJ4	9/16-18	-04
4T4FJ6	7/16-20	-06
4T5FJ6	1/2-20	-06
4T6FJ6	9/16-18	-06
4T6FJ8	9/16-18	-08
4T10FJ6	7/8-14	-06
4T10FJ8	7/8-14	-08
4T16FJ8	1 5⁄16-12	-08
4T8FJ10	3/4-16	-10
4T10FJ10	7/8-14	-10
4T12FJ10	1 1⁄16-12	-10
4T10FJ12	3/4-16	-12
4T12FJ12	7/8-14	-12
4T14FJ12	1 1⁄16-12	-12
4T16FJ12	7/8-14	-12
4T12FJ16	1 1⁄16-12	-16
4T14FJ16	1 3⁄16-12	-16
4T16FJ16	1 5⁄16-12	-16
4T20FJ16	1 5⁄8-12	-16
4T16FJ20	1 5⁄16-12	-20
4T20FJ20	1 5⁄8-12	-20
4T24FJ24	1 7⁄8-12	-24
4T32FJ32	2 1⁄2-12	-32

FJA

JIC/37° female swivel, 45° tube elbow



Part #	Thread	Hose size
4T4FJA4*	7/16-20	-04
4T5FJA4*	1/2-20	-04
4T6FJA4	9/16-18	-04
4T4FJA6	7/16-20	-06
4T6FJA6	9/16-18	-06
4T8FJA6*	3/4-16	-06
4T8FJA8	3/4-16	-08
4T10FJA8*	7/8-14	-08
4T10FJA10*	7/8-14	-10
4T12FJA10	1 1⁄16-12	-10
4T12FJA12	1 1⁄16-12	-12
4T16FJA12	1 5⁄16-12	-12
4T16FJA16	1 5⁄16-12	-16
4T20FJA120	1 5⁄8-12	-20

** Swivel nuts are universal, both 37 and 45 connections*

FJB

JIC/37° female swivel, 90° elbow

Part #	Thread	Hose size
4T4FJB4	7/16-20	-04
4T5FJB4*	1/2-20	-04
4T6FJB4	9/16-18	-04
4T4FJB6	7/16-20	-06
4T6FJB6	9/16-18	-06
4T8FJB6*	3/4-16	-06
4T6FJB8	9/16-18	-08
4T8FJB8	3/4-16	-08
4T10FJB8*	7/8-14	-08
4T10FJB10*	7/8-14	-10
4T12FJB10*	1 1⁄16-12	-10
4T10FJB12	7/8-14	-12
4T12FJB12	1 1⁄16-12	-12
4T16FJB12	1 5⁄16-12	-12
4T16FJB16	1 5⁄16-12	-16
4T20FJB20	1 5⁄8-12	-20
4T24FJB24	1 7⁄8-12	-24

** Swivel nuts are universal, both 37 and 45 connections*

FR

Female ORS swivel

#	Thread	Hose size
4T4FR4	9/16-18	-04
4T6FR4	11/16-16	-04
4T8FR4	13/16-16	-04
4T4FR6	9/16-18	-06
4T6FR6	11/16-18	-06
4T8FR6	13/16-16	-06
4T6FR8	11/16-16	-08
4T8FR8	13/16-16	-08
4T10FR8	1-14	-08
4T12FR8	13/16-12	-08
4T8FR10	13/16-16	-10
4T10FR10	1-14	-10
4T12FR10	13/16-12	-10
4T10FR12	1-14	-12
4T12FR12	13/16-12	-12
4T16FR12	1 7/16-12	-12
4T12FR16	1 3/16-12	-16
4T16FR16	1 7/16-12	-16
4T20FR16	1 11/16-12	-16
4T20FR20	1 11/16-12	-20
4T24FR20	2-12	-20

FRA

Female ORS swivel,
45° tube elbow

Part #	Thread	Hose size
4T4FRA4	9/16-18	-04
4T6FRA4	11/16-16	-04
4T4FRA6	9/16-18	-06
4T6FRA6	11/16-16	-06
4T8FRA6	13/16-16	-06
4T8FRA8	13/16-16	-08
4T10FRA8	1-14	-08
4T12FRA8	13/16-12	-08
4T10FRA10	1-14	-10
4T12FRA10	13/16-12	-10
4T12FRA12	13/16-12	-12
4T16FRA12	1 7/16-12	-12
4T12FRA16	1 3/16-12	-16
4T16FRA16	1 7/16-12	-16
4T20FRA16	1 11/16-12	-16
4T20FRA20	1 11/16-12	-20
4T24FRA20	2-12	-20
4T24FRA24	2-12	-24

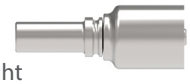
FRB

Female ORS swivel,
90° tube elbow
short drop

Part #	Thread	Hose size
4T4FRB4	9/16-18	-04
4T6FRB4	11/16-16	-04
4T4FRB6	9/16-18	-06
4T6FRB6	11/16-16	-06
4T8FRB6	13/16-16	-06
4T6FRB8	11/16-16	-08
4T8FRB8	13/16-16	-08
4T10FRB8	1-14	-08
4T12FRB8	1 3/16-12	-08
4T10FRB10	1-14	-10
4T12FRB10	1 3/16-12	-10
4T10FRB12	1-14	-12
4T12FRB12	1 3/16-12	-12
4T16FRB12	1 7/16-12	-12
4T16FRB16	1 7/16-12	-16
4T20FRB16	1 11/16-12	-16
4T20FRB20	1 11/16-12	-20
4T20FRB20.078	1 11/16-12	-20
4T24FRB20	2-12	-20
4T24FRB24	2-12	-24

LM

Metric standpipe, straight



#	Thread	Hose size
4T6LM4	6	-4
4T8LM4	8	-4
4T10LM4	10	-4
4T10LM5	10	-5
4T12LM5	12	-5
4T10LM6	10	-6
4T12LM6	12	-6
4T14LM6	14	-6
4T15LM8	15	-8
4T18LM10	18	-10
4T20LM12	20	-12
4T25LM16	25	-16

LMB

Metric standpipe,
90° elbow

Part #	Thread	Hose size
4T6LMB4	6	-4
4T8LMB4	8	-4
4T10LMB4	10	-4
4T10LMB5	10	-5
4T12LMB5	12	-5
4T10LMB6	10	-6
4T12LMB6	12	-6
4T14LMB6	14	-6
4T15LMB8	15	-8
4T18LMB10	18	-10
4T20LMB12	20	-12
4T25LMB16	25	-16

MJ

JIC/37° male rigid

Part #	Thread	Hose size
4T4MJ4	7/16-20	-04
4T5MJ4	1/2-20	-04
4T6MJ4	9/16-18	-04
4T6MJ6	9/16-18	-04
4T8MJ6	3/4-16	-06
4T10MJ6	7/8-14	-06
4T8MJ8	3/4-16	-08
4T10MJ8	7/8-14	-08
4T12MJ8	1 1/16-12	-08
4T8MJ10	3/4-16	-10
4T10MJ10	7/8-14	-10
4T12MJ10	1 1/16-12	-10
4T10MJ12	7/8-14	-12
4T12MJ12	1 1/16-12	-12
4T14MJ12	1 3/16-12	-12
4T16MJ12	1 5/16-12	-12
4T16MJ16	1 5/16-12	-16
4T20MJ16	1 5/8-12	-16
4T20MJ20	1 5/8-12	-20
4T24MJ24	1 7/8-12	-24

MP

N.P.T.F. male pipe rigid

Part #	Thread	Hose size
4T2MP4	1/8-27	-04
4T4MP4	1/4-18	-04
4T6MP4	3/8-18	-04
4T8MP4	1/2-14	-04
4T4MP6	1/4-18	-06
4T6MP6	3/8-18	-06
4T8MP6	1/2-14	-06
4T4MP8	1/4-18	-08
4T6MP8	3/8-18	-08
4T8MP8	1/2-14	-08
4T12MP8	3/4-14	-08
4T6MP10	3/8-18	-10
4T8MP10	1/2-14	-10
4T12MP10	3/4-14	-10
4T8MP12	1/2-14	-12
4T12MP12C	3/4-14	-12
4T12MP12	3/4-14	-12
4T16MP12	1 11 ½	-12
4T12MP16	3/4-14	-16
4T16MP16	1 11 ½	-16
4T20MP16	1 ¼-1 11 ½	-16
4T20MP20	1 ¼-1 11 ½	-20
4T24MP24	1 ½-1 11 ½	-24
4T32MP32	2-1 11½	-32

Chemical resistance data

This chart is intended to serve as a guide and does not guarantee suitability of hose material with the chemicals listed.
Final selection of materials is dependent on many factors including variations in temperature, pressure, and duration of exposure.

Hose Material Key

N = Nylon	H = Polyester

Resistance Rating Key

G = Good	P = Poor
L = Limited	NT = Not Tested

	N	H
Acetaldehyde	G	G
Acetic Acid	L	L
Acetic Anhydride	L	L
Acetone	G	L
Acetyl Bromide	P	P
Acetyl Chloride	P	P
Acetylene	G	G
Air	G	G
*Alcohols	G	L
Aluminum Chloride	P	NT
Aluminum Sulphate	G	NT
Alums	P	NT
Ammonia Gas	P	P
Ammonium Chloride	G	G
Ammonium Hydroxide	P	P
Ammonium Nitrate	G	L
Ammonium Phosphate	G	L
Ammonium Sulphate	G	L
Amyl Acetate	G	L
Amyl Alcohol	G	G
Anethole	G	NT
Aniline	L	P
Animal Oils	G	G
Antimony Salts	G	G
Apoclor Monsanto (Chlorinated Hydrocarbon Hydraulic Fluid)	G	L
Aromatic Hydrocarbons	G	L
Arsenic Salts	G	G
Asphalt	G	G
Auto Transmission Fluid	G	G
Barium Chloride	G	G
Barium Salts	G	G
Basic Copper Arsenate	G	G
Benzaldehyde	G	G
Benzene	G	L
Benzoic Acid	G	P
Benzol (Benzene)	G	L
Benzyl Alcohol	L	L
Borax	G	G
Bordeaux Mixture	G	G
Boric Acids	G	G
Boric Copper Sulphate	G	G
Bromine	P	P
Butanol	G	G
* Butter	G	G
Butyl Acetate	G	L
Calcium Arsenate	G	G
Calcium Bisulphide	G	G
Calcium Chloride	G	G
Calcium Hydroxide (<20%)	G	L
Calcium Hypochlorite	G	L
Calcium Salts	G	G
Carbolic Acid	P	P
Carbon Bisulfide	G	L
Carbon Disulfide	G	L
Carbon Monoxide	G	G
Carbon Tetrachloride	G	P
Carbonic Acid	G	L
Castor Oil	G	L
Caustic Potash (>20%)	L	L
Caustic Potash (<20%)	G	L
Caustic Soda (>20%)	L	L
Caustic Soda (<20%)	G	L
Cellusolves Union Carbide	G	P
Cellulubes Celanese (Hydraulic Fluid, Phosphate Ester Base)	G	P
Chloracetic Acid	P	P
Chloroform	G	P
Chlordane	G	G
Chlorinated Solvents	G	P
Chlorine (Dry)	P	P
Chlorine (Water) (<20%)	L	P
Chromic Acid	P	P
Chromium Salts	G	G
*Cider	G	G
Citric Acid	G	L
Coal Gas	G	G
Copper Chloride	L	G
Copper Sulphate	G	G
*Corn Oil	G	G
Cottonseed Oil	G	G
Creosote	P	P
Cresols	P	P
Cresylic Acid	P	P
Crude Petroleum Oil	G	L
Cupric Sulphate	L	L
Cyclohexane	G	G
Cyclohexanone	G	G
Decalin	G	NT
Diacetone Alcohol	G	L
Diammonium Phosphate	G	L
Dibutyl Phthalate	G	L
Diesel Fuel	G	G
Diethanolamine (20% conc.)	G	L
Diethyl Ether	G	L
Dioctyl Phosphate	G	L
Dioctylphthalate	G	L
Enamels	G	G
Essential Oils	G	G
* Ethanol	G	L
Ether	G	L
Ethyl Acetate	G	L
* Ethyl Alcohol	G	L
Ethyl Chloride	G	P
Ethylene Chlorhydrin	P	P
Ethylene Dichloride	G	P
†Ethylene Glycol	G	G
Ethylene Oxide	G	L
Fatty Acid	G	G
Ferric Chloride	L	NT
Ferric Sulphate	G	G
Fluoboric Acid	NT	P
Fluorine	P	P
Fluorosilicic	NT	NT
Formaldehyde	G	L
Formic Acid	P	P
Freon	G	L
*Fruit Juice	G	G
Fuel Oil (Aromatic Gas) 100 Octane	G	G
Fuel Oil	G	G
Furfuryl Alcohol	G	G
Galic Acid (<20%)	G	L
** Gas (Natural)	G	G
Gas Oil	G	GL
Gasoline	G	G
Gasoline (Aromatic)	G	G
Gasoline (Non-Aromatic)	G	G
Gelatin	G	G
Glucose	G	G
Glue (Depends on type)	G	G
†Glycerine	G	G
†Glycol	G	G
Greases	G	G
Heavy Water (D2O)	G	G
Heptane	G	G
Hexane	G	G
†Houghto Safe Houghton 600 Series (Hyd. Fluid Water Glycol Base)	G	L
†Houghto Safe Houghton 1000 Series (Phosphate Ester Base)	G	L
Hydraulic Fluid Petroleum Base	G	G
†Hydraulic Fluid Water Glycol Base	G	G
†Hydraulic Fluid		
Phosphate Ester	G	L
Hydraulic Oil	G	G
Hydrochloric Acid (10%)	G	P
Hydrocyanic Acid	P	NT
Hydrofluoric Acid	P	P
Hydrogen Gas	G	G
Hydrogen Peroxide (dil.)	G	G
Hydrogen Peroxide (conc.)	P	P
Hydrogen Sulphide	L	L
†Hydrolube Union Carbide—(Hydraulic Fluid Water Glycol Base)	G	L
†Irus Shell 902 Hydraulic Fluid (Water-Oil Emulsion) Sulphide	G	G
Isocyanates	G	G
Isopropyl Acetate	G	L
Kerosene	G	G
Ketones	G	L
Lacquer Solvents	G	L
Lactic Acid	G	NT
Lard	G	G

Chemical resistance data (continued)

	N	H
Lead Arsenate	G	G
Lead Sulphate	G	G
Lead Tetramethyl	G	G
Lime	G	G
Linseed Cake	G	G
Linseed Oil	G	G
Lubricating Oils, Petroleum Base	G	G
†Lubricating Oils, Diester Base	G	L
Magnesium Chloride	G	G
Magnesium Hydroxide (<20%)	G	L
Magnesium Sulphate	G	G
Maleic Acid	G	L
Mercuric Chloride	G	G
Mercury	G	G
**Methane	G	G
Methanol	G	L
Methyl Acetate	G	L
Methyl Bromide	L	P
Methyl Chloride	G	P
Methyl Sulphate	G	G
Methylethylketone (MEK)	G	L
Methylisobutylketone (MIBK)	G	L
*Milk	G	G
Mineral Oil	G	G
Molasses	G	G
Mustard	G	G
Naphtha	G	L
Naphthalene	G	L
Nickel Chloride	P	P
Nicotine	G	G
Nitric Acid (<20%)	L	L
Nitric Acid (>20%)	L	P
Nitrobenzene	G	P
* Nitrous Oxide	G	G
Oil	G	G
* Oil of Turpentine	G	G
Oleic Acid	G	G
OS 45 Monsanto Hydraulic Fluid (Silicate Ester Base)	G	L
Oxalic Acid (-30%)	G	L
Oxygen	Refer	to Factory
Ozone	G	G
Paint (Oil Base)	G	G
Paint Solvents (Oil Base)	G	L
Palmitic Acid	G	G
Pentane	G	G
Perchloric Acid	P	P
Perchlorethylene	G	P

	N	H
Petroleum Oils (Sour)	G	L
Petroleum Oils (Refined)	G	G
Phenolates	L	L
Phenols	P	P
Phosphoric Acid	G	P
Picric Acid	L	P
Potash (Potassium Hydroxide)	L	P
Potassium Chloride	G	G
Potassium Hydroxide (50% conc.)	L	P
Potassium Nitrate	G	G
Potassium Permanganate (5% conc.)	P	P
Potassium Sulphate	G	G
Propane	G	G
†Pydraul (Stauffer) F-9, 150, 600, 625	G	L
Pyrethrum	G	G
Pyridine	L	L
†Sea Water	G	G
†Skydrol Monsanto 500, 7000	G	P
†Soap Solution (conc.)	G	G
* † Soda Water	G	G
Sodium Bicarbonate	G	G
Sodium Bisulfite	G	G
Sodium Borate	G	G
Sodium Carbonate	G	G
Sodium Chloride	G	G
Sodium Cyanide	G	G
Sodium Hydroxide (<20%)	G	L
Sodium Hypochlorite	L	L
Sodium Nitrate	G	G
†Sodium Phosphate Solution	G	G
Sodium Silicate	G	G
Sodium Sulphate	G	G
Sodium Thiosulphate	G	G
Solutions/Emulsions 2-4D DDT Preparation Hydroxy Quinoline	G	NT
Stannous Chloride	L	G
Steam	P	P
Stearic Acid	G	G
Stearin	G	G
Stoddard Solvent	G	P
Styrene	G	L
Sulphur	G	G
Sulphur Dioxide	P	P
Sulphur Trioxide	L	P
Sulphur Acid (dil.)	L	LP
Sulphur Acid (conc.)	P	P
Sulphurous Acid	P	LP
Tannic Acid	G	L

	N	H
Tar Oil	G	G
Tartaric Acid	G	G
Toluene	G	L
Toluol	G	L
Tributyl Phosphate	G	L
Tricesylphosphate	G	L
Trichloracetic Acid	P	P
Trichloroethylene	G	P
†Trisodium Phosphate Solution	G	L
Turpentine	G	G
†Ucon Union Carbide (Hydraulic Fluid Water Glycol Base)	G	L
Urea	G	L
Uric Acid	G	P
Varnish	G	G
Vinegar	G	L
† Water (150°F)	G	G
White and Bagley No. 2190 Cutting Oil	G	NT
*Wine	G	G
Wool Oil	G	G
Xylol	G	L
Xylene	G	L
Zinc Chloride	G	G
Zinc Hydrate	P	L
Zinc Sulphate	P	L

* *Does not imply NSF or FDA compliance*
† *Recommended operating temperature not to exceed +150°F (+66°C)*
** *Does not imply AGA or UL compliance*
‰ *Recommended operating temperature not to exceed +100°F (+37.8°C)*

Hose Material Reference Chart

Series	Core
3TR7	Nylon
3TR7N	Nylon
3TR8	Nylon
3TR8N	Nylon
3TR18CT	Polyester

Series	Core
3CH0	Nylon
31CT	Polyester
3TB0	Polyester
37B0	Polyurethane
3R80	Nylon

Notes

Notes

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