

ENGINEERING
TOMORROW



Danfoss Synflex Optimum

Design Reimagined

Thermoplastic hydraulic hose and fittings



Optimum

thermoplastic hose
can be thermoformed
to work in the
configuration you
need



POWERFLEX-FHP BV
Flevolaan 62g
1382 JZ Weesp
The Netherlands

Phone : +31 294 - 450 200
Mail : sales@pflex.eu
Web : pflex.eu



Empowering without limitations

Higher performing. More configurations. Lower cost.



SYNLEX OPTIMUM 3TR7N

Danfoss' Synflex Optimum 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. And our commitment to innovation includes the design and technical support needed to develop more efficient, safe and productive systems.

www.eaton.com/synflexoptimum

To learn more about the Synflex Optimum thermoplastic hydraulic hose and fittings portfolio.



100R7

3TR7 / 3TR7N Non-conductive

100R8

3TR8 / 3TR8N Non-conductive

100R18

3TR18CT



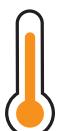
UV / Ozone protection

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 1,015 psi to 5,000 psi.



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.



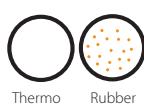
Lighter weight

Synthetic reinforced thermoplastic hoses are about 2x lighter than equivalent wire braided rubber hose.



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 to help you maintain a clean system.



Noise reduction

Special reinforcements on the thermoplastic hoses help reduce machine noise.

Fittings



■ 100R7 ■ 100R8 ■ 100R18

4TA series

Optimized one-piece fitting crimps directly to Synflex 100R7, 100R8 and 100R18 hoses for the most robust economic connection.



■ 100R7 ■ 100R8

TTC / Z series (with sleeve)

Leverage Danfoss's bestselling or existing high volume fitting on 100R7 and 100R8 hoses by adding a sleeve.



■ 100R7

901/902 series

Field attachable reusable fitting that can be assembled with hand tools made specifically for R7 hose.



Fittings being rationalized from the portfolio include **903, 90H, 90N and U series**.

SAE 100R7 Thermoplastic hose

3TR7

SYN FLEX OPTIMUM 3TR7



3TR7N Non-conductive

SYN FLEX OPTIMUM 3TR7N



92.2 ANSI (-4 thru -10)

| 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 | bar | psi | kg/m | lbs/ft |
| 3TR7-02 | 3,2 | 0.12 | 8,5 | 0.33 | 210 | 3050 | | | 840 | 12200 | 12,7 | 0.50 |
| 3TR7-03 | 4,8 | 0.19 | 10,8 | 0.43 | 210 | 3050 | | | 840 | 12200 | 19,0 | 0.75 |
| 3TR7N-03 | | | | | | | 210 | 3050 | | | | |
| 3TR7-04 | 6,4 | 0.25 | 12,5 | 0.49 | 210 | 3050 | | | 759 | 11000 | 31,8 | 1.25 |
| 3TR7N-04 | | | | | | | 210 | 3050 | | | | |
| 3TR7-05 | 7,9 | 0.31 | 14,6 | 0.57 | 175 | 2550 | | | 690 | 10000 | 38,1 | 1.50 |
| 3TR7N-05 | | | | | | | 207 | 3000 | | | | |
| 3TR7-06 | 9,8 | 0.39 | 16,5 | 0.65 | 157 | 2300 | | | 621 | 9000 | 50,8 | 2.00 |
| 3TR7N-06 | | | | | | | 207 | 3000 | | | | |
| 3TR7-08 | 12,7 | 0.50 | 20,8 | 0.82 | 140 | 2050 | | | 621 | 9000 | 69,9 | 2.75 |
| 3TR7N-08 | | | | | | | 207 | 3000 | | | | |
| 3TR7-10 | 16,0 | 0.63 | 23,6 | 0.93 | 105 | 1525 | | | 421 | 6100 | 101,6 | 4.00 |
| 3TR7N-10 | | | | | | | 140 | 2050 | | | | |
| 3TR7-12 | 19,0 | 0.75 | 26,4 | 1.04 | 86 | 1250 | | | 348 | 5000 | 127,0 | 5.00 |
| 3TR7N-12 | | | | | | | | | | | | |
| 3TR7-16 | 25,4 | 1.00 | 33,7 | 1.33 | 69 | 1000 | | | 280 | 4000 | 190,5 | 7.50 |
| 3TR7N-16 | | | | | | | | | | | | |

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

3TR7N supersedes

3740, 37AL

Approved fittings



4TA series



TTC/Z series
with sleeve
(FF91064)



901/902 series

Inner tube

Nylon

Reinforcement:

1-textile braid

Cover

Nonstick polyurethane

3TR7 perforated

3TR7N non-perforated

Typical platforms

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

How to order/ part # structure



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

3TR8

SYN FLEX OPTIMUM 3TR8

**3TR8N Non-conductive**

SYN FLEX OPTIMUM 3TR8N



| 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 4050 | 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 |

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)**Approved fittings**

4TA series



TTC/Z series with sleeve (FF91064)

**How to order/
part # structure****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**3TR8 supersedes**

3R80

3TR8N supersedes

3E80

SAE 100R18 Thermoplastic hose

3TR18CT

SYNTEX OPTIMUM 3TR18CT



Inner tube

Polyester

Reinforcement

2-textile braid

Cover

Nonstick polyester

3TR18CT perforated

Typical platforms

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

| Part # | Hose I.D. | Hose O.D. (nominal) | Working Pressure | Min. Burst Pressure | Min. Bend Radius | Weight | | | | | | |
|------------|-----------|---------------------|------------------|---------------------|------------------|--------|-----|-------|-------|------|------|------|
| 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



3TR18CT supersedes

30CT

How to order/ part # structure

3TR18CT-08-250BX

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

Available to bond up to 6 lines, see examples below of twin-line for each hose series.

3TR7 Twin-line



| Part # | Number of hose |
|-----------------|----------------|
| 3TR7-04-2-250BX | 2 |
| 3TR7-05-2-250BX | 2 |
| 3TR7-06-2-250BX | 2 |
| 3TR7-08-2-250BX | 2 |
| 3TR7-10-2-250BX | 2 |
| 3TR7-12-2-250BX | 2 |
| 3TR7-16-2-250BX | 2 |

3TR7N Twin-line Non-conductive



| Part # | Number of hose |
|------------------|----------------|
| 3TR7N-04-2-250BX | 2 |
| 3TR7N-05-2-250BX | 2 |
| 3TR7N-06-2-250BX | 2 |
| 3TR7N-08-2-250BX | 2 |
| 3TR7N-10-2-250BX | 2 |
| 3TR7N-12-2-250BX | 2 |
| 3TR7N-16-2-250BX | 2 |

3TR8 Twin-line



| Part # | Number of hose |
|-----------------|----------------|
| 3TR8-04-2-250BX | 2 |
| 3TR8-06-2-250BX | 2 |
| 3TR8-08-2-250BX | 2 |
| 3TR8-12-2-250BX | 2 |
| 3TR8-16-2-250BX | 2 |

3TR8N Twin-line Non-conductive



| Part # | Number of hose |
|------------------|----------------|
| 3TR8N-04-2-250BX | 2 |
| 3TR8N-06-2-250BX | 2 |
| 3TR8N-08-2-250BX | 2 |
| 3TR8N-12-2-250BX | 2 |
| 3TR8N-16-2-250BX | 2 |

3TR18CT Twin-line



| Part # | Number of hose |
|--------------------|----------------|
| 3TR18CT-04-2-250BX | 2 |
| 3TR18CT-05-2-250BX | 2 |
| 3TR18CT-06-2-250BX | 2 |
| 3TR18CT-08-2-250BX | 2 |
| 3TR18CT-10-2-250BX | 2 |

How to order/part # structure



BC: continuous length in box

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

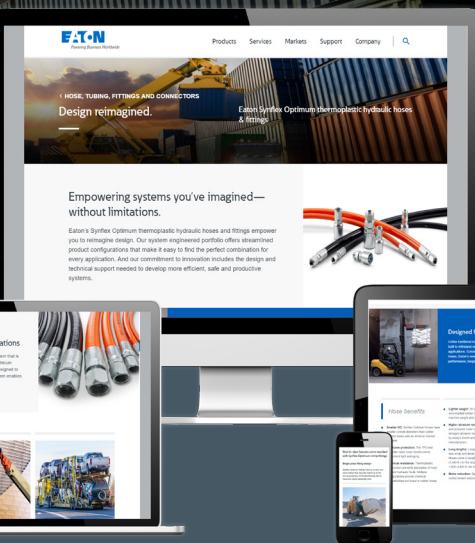
RL: random length reel, 2 lengths per reel, no length less than 20 ft.

R: continuous length on reel

HOSE, TUBING, FITTINGS AND CONNECTORS

Design reimagine.

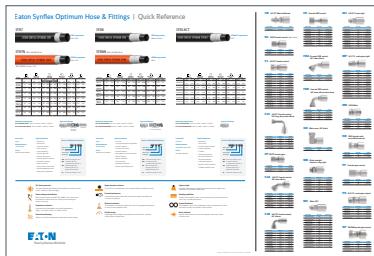
Danfoss Synflex Optimum
thermoplastic hoses & fittings



- Effortless implementation and assembly
- High endurance and reduced leak points
- Smooth installations and total quality control
- Convenient delivery and reduced cost

Additional collateral

Synflex Optimum wall chart



Synflex Optimum wall chart

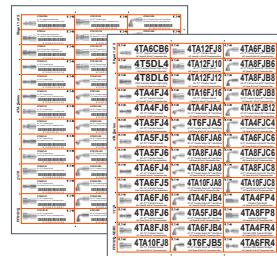
Hose and fittings (36 x 24 in.)
E-EQCR-BB003-E1

Synflex Optimum Lubrication & Grease Line



Synflex Optimum Thermoplastic lubrication and grease line brochure
E-HOTH-BB010-E

4TA label sets



4TA label sets

FF91610 (with bar codes)
FF91610_NOBC (without bar codes)

Synflex Optimum sales kit



Synflex Optimum sale kit

FF17673 Hose and Fitting samples, 4TA cutaway, thermoformed sample and Synflex Optimum brochure

Synflex Optimum Platform Application Guide



Synflex Optimum Platform Application Guide
E-HOAC-BB006-E

www.eaton.com/synflexoptimum

To learn more about the Synflex Optimum thermoplastic hydraulic hose and fittings portfolio.

Designed for tough jobs.

As the pioneers of thermoforming technology, Danfoss Synflex has taken the lead in overcoming hose routing and installation obstacles. Our application engineers work with customers developing designs and configurations that solve problems and improve manufacturing throughput.

Advantages

Flexibility

Our application engineers work with customer CAD models and develop routing best practices into customer's systems.

Speed

Quick turnaround of design proposals and quotations.

Hands-on support

Our field engineers can be on site for prototype installation and initial production runs.

Cutting edge technology

State of the art 3D printing for molds and fixtures providing quick design and prototype turnaround time.

Benefits

Smooth installations and quality control

Product manufacturing and design done in house, by Danfoss, combined with custom labeled and marked assemblies makes for easy installation.

Reduced cost and complexity

Elimination of fittings, connections and other attachments reduces leak points and provides an overall cost savings.

Variety of capabilities

Thermoforming can be done with almost all of Danfoss' thermoplastic hose and tube products creating endless combinations and opportunities.

Best routing practices

Ideal for tight fitting spaces and routing away from heat sources and abrasion points.



Synflex Optimum 4TA fittings

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.

New compact design & smaller profile



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.

Complete nipple part number:

4T A 12 FJ A 16 _

Product Group _____

4T = one piece non-skive braided fitting

Material stock code _____

A = inch hex stock or metric equivalent

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)

DL = DKO female swivel light duty

FJ = SAE JIC 37° Female swivel

FP = NPTF Female pipe

FR = ORS Female swivel

MB = Male O-ring boss (ORB)

MC = Male STC

MJ = SAE JIC 37° male rigid

MP = Male pipe rigid

MR = ORS male

NR = ORS Female with non-slide back nut

PF = Female pipe swivel

PS = Male pipe swivel

SP = NPSM female pipe swivel

ZB = NPSM Bulkhead with Grease Zerk and Jam Nut

ZP = Zerk male tapered

Terminal end connecting configuration _____

If nipple has a straight configuration,
then this position collapses

A = 45° D = 22 1/2° H = 110°

B = 90°, standard E = 67 1/2°
or short drop F = 30°

C = 90° long drop G = 60°

Hose size* _____

Material designation _____

C = 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

4TA core & Reusable fittings

4TA Fittings ▶

CB

JIC 37° male flare
bulkhead (with jam nut)



DL

DKO female swivel
(light duty)



FJ

JIC/37° female swivel



| # | Hose | Thread |
|-----------|------|-----------|
| 4TA2FJ2 | 2 | 5/16-24 |
| 4TA3FJ2 | 2 | 3/8-24 |
| 4TA4FJ2 | 2 | 7/16-20 |
| 4TA4FJ3 | 3 | 7/16-20 |
| 4TA5FJ3 | 3 | 1/2-20 |
| 4TA4FJ4 | 4 | 7/16-20 |
| 4TA4FJ6 | 6 | 7/16-20 |
| 4TA5FJ4 | 4 | 1/2-20 |
| 4TA5FJ5 | 5 | 1/2-20 |
| 4TA5FJ6 | 6 | 1/2-20 |
| 4TA6FJ4 | 4 | 9/16-18 |
| 4TA6FJ5 | 5 | 9/16-18 |
| 4TA6FJ6 | 6 | 9/16-18 |
| 4TA8FJ6 | 6 | 3/4-16 |
| 4TA8FJ8 | 8 | 3/4-16 |
| 4TA10FJ8 | 8 | 7/8-14 |
| 4TA12FJ8 | 8 | 1 1/16-12 |
| 4TA12FJ10 | 10 | 1 1/16-12 |
| 4TA12FJ12 | 12 | 1 1/16-12 |
| 4TA16FJ16 | 16 | 1 5/16-12 |

FJA

JIC/37° female swivel,
45° tube elbow



| # | Hose | Thread |
|-----------|------|---------|
| 4TA4FJA3 | -03 | 7/16-20 |
| 4TA4FJA4 | -04 | 7/16-20 |
| 4TA6FJA5 | -05 | 9/16-18 |
| 4TA6FJA6 | -06 | 9/16-18 |
| 4TA8FJA6 | -06 | 7/8-14 |
| 4TA8FJA8 | -08 | 3/4-16 |
| 4TA10FJA8 | -08 | 7/8-14 |

FJB

JIC/37° female
swivel, 90° elbow



| # | Hose | Thread |
|------------|------|-----------|
| 4TA4FJB2 | -02 | 7/16-20 |
| 4TA4FJB3 | -03 | 7/16-20 |
| 4TA4FJB4 | -04 | 7/16-20 |
| 4TA5FJB4 | -04 | 1/2-20 |
| 4TA6FJB4 | -04 | 9/16-18 |
| 4T6FJB5 | -05 | 9/16-18 |
| 4TA6FJB6 | -06 | 9/16-18 |
| 4TA8FJB6 | -06 | 3/4-16 |
| 4TA8FJB8 | -08 | 3/4-16 |
| 4TA10FJB8 | -08 | 1 7/8-12 |
| 4TA12FJB12 | -12 | 1 1/16-12 |

FJC

JIC/37° female swivel,
90° long drop tube
elbow



| # | Hose | Thread |
|-----------|------|---------|
| 4TA4FJC4 | -04 | 7/8-14 |
| 4TA6FJC6 | -06 | 9/16-18 |
| 4TA8FJC6 | -06 | 3/4-16 |
| 4TA8FJC8 | -08 | 3/4-16 |
| 4TA10FJC8 | -08 | 7/8-14 |

FP

NPTF female pipe



| # | Hose | Thread |
|---------|------|--------|
| 4TA4FP4 | -04 | 1/4-18 |
| 4TA8FP8 | -08 | 1/2-14 |

FR

Female ORS
swivel



| # | Hose | Thread |
|-----------|------|-----------|
| 4TA4FR2 | -02 | 9/16-18 |
| 4TA4FR4 | -04 | 9/16-18 |
| 4TA6FR4 | -04 | 11/16-16 |
| 4TA6FR6 | -06 | 11/16-16 |
| 4TA8FR6 | -06 | 13/16-16 |
| 4TA8FR8 | -08 | 13/16-16 |
| 4TA10FR8 | -08 | 1-14 |
| 4TA10FR10 | -10 | 1-14 |
| 4TA12FR12 | -12 | 1 3/16-12 |

FRA

Female ORS swivel,
45° tube elbow



| # | Hose | Thread |
|----------|------|----------|
| 4TA4FRA4 | -04 | 9/16-18 |
| 4TA6FRA6 | -06 | 11/16-12 |

FRB

Female ORS swivel,
90° tube elbow
short drop



| # | Hose | Thread |
|----------|------|----------|
| 4TA4FRB2 | -02 | 9/16-18 |
| 4TA4FRB4 | -04 | 9/16-18 |
| 4TA6FRB4 | -04 | 11/16-16 |
| 4TA6FRB6 | -06 | 11/16-16 |
| 4TA8FRB8 | -08 | 13/16-12 |

GB

Male cone, 60° Block



| # | Hose | Thread |
|----------|------|--------|
| 4TA6BGB6 | -06 | 3/8-19 |

MB

Male straight thread
o-ring rigid



| # | Hose | Thread |
|---------|------|---------|
| 4TA4MB3 | -03 | 7/16-20 |
| 4TA4MB4 | -04 | 7/16-20 |
| 4TA5MB4 | -04 | 1/2-20 |
| 4TA6MB4 | -04 | 9/16-18 |
| 4TA6MB5 | -05 | 1/2-20 |
| 4TA6MB6 | -06 | 9/16-18 |
| 4TA8MB6 | -06 | 3/4-16 |

MC

Male STC



| # | Hose | Thread |
|------------|------|--------|
| 4TA10MCA8 | -08 | -10 |
| 4TA10MCB8 | -08 | -10 |
| 4TA10MC8 | -08 | -10 |
| 4TA8MCB8 | -08 | -08 |
| 4TA8MC8 | -08 | -08 |
| 4TA6MCA6 | -06 | -06 |
| 4TA6MCB6 | -06 | -06 |
| 4TA6MC6 | -06 | -06 |
| 4TA6MC4 | -04 | -06 |
| 4TA6MCA4 | -04 | -06 |
| 4TA6MCB4 | -04 | -06 |
| 4TA12MCB12 | -12 | -12 |
| 4TA12MC12 | -12 | -12 |
| 4TA10MC10 | -10 | -10 |

MJ

JIC/37° male rigid



| # | Hose | Thread |
|----------|------|---------|
| 4TA4MJ3 | -03 | 7/16-20 |
| 4TA4MJ4 | -04 | 7/16-20 |
| 4TA5MJ4 | -04 | 1/2-20 |
| 4TA5MJ5 | -05 | 1/2-20 |
| 4TA6MJ4 | -04 | 9/16-18 |
| 4TA6MJ5 | -05 | 9/16-18 |
| 4TA6MJ6 | -06 | 9/16-18 |
| 4TA8MJ6 | -06 | 3/4-16 |
| 4TA8MJ8 | -08 | 3/4-16 |
| 4TA10MJ8 | -08 | 7/8-14 |

MP

N.P.T.F. male pipe rigid



| # | Hose | Thread |
|-----------|------|----------|
| 4TA2MP2 | -02 | 1/8-27 |
| 4TA4MP2 | -02 | 1/4-18 |
| 4TA2MP3 | -03 | 1/8-27 |
| 4TA4MP3 | -03 | 1/4-18 |
| 4TA2MP4 | -04 | 1/8-27 |
| 4TA4MP4 | -04 | 1/4-18 |
| 4T4MP5 | -05 | 1/4-18 |
| 4TA4MP6 | -06 | 1/4-18 |
| 4TA6MP4 | -04 | 3/8-18 |
| 4T6MP5 | -05 | 3/8-18 |
| 4TA6MP6 | -06 | 3/8-18 |
| 4TA6MP8 | -08 | 3/8-18 |
| 4TA8MP6 | -06 | 1/2-14 |
| 4TA8MP8 | -08 | 1/2-14 |
| 4TA12MP12 | -12 | 3/4-14 |
| 4TA16MP16 | -16 | 1-11 1/2 |

MR

ORS Male



| # | Hose | Thread |
|---------|------|----------|
| 4TA4MR4 | -04 | 9/16-18 |
| 4TA6MR6 | -06 | 11/16-16 |
| 4TA8MR6 | -06 | 13/16-16 |
| 4TA8MR8 | -08 | 13/16-16 |

NR



ORS female with non-slide back nut

| # | Hose | Thread |
|-----------|------|------------|
| 4TA6NR6 | -06 | 1 11/16-16 |
| 4TA10NR10 | -10 | 1-14 |

PF



Female pipe swivel

| # | Hose | Thread |
|---------|------|--------|
| 4TA4PF2 | -02 | 1/4-18 |
| 4TA2PF3 | -03 | 1/8-27 |
| 4TA4PF4 | -04 | 1/4-18 |
| 4TA6PF6 | -06 | 3/8-18 |

PS



N.P.T.F. male pipe swivel

| # | Hose | Thread |
|-----------|------|--------|
| 4TA2PS2 | -02 | 1/4-18 |
| 4TA4PS4 | -04 | 1/4-18 |
| 4TA4PS5 | -05 | 1/4-18 |
| 4TA6PS6 | -06 | 3/8-18 |
| 4TA8PS8 | -08 | 1/2-14 |
| 4TA12PS12 | -12 | 3/4-14 |

SP



NPSM female pipe swivel

| # | Hose | Thread |
|-----------|------|----------|
| 4TA4SP4 | -04 | 1/4-18 |
| 4TA6SP6 | -06 | 3/8-18 |
| 4TA8SP8 | -08 | 1/2-14 |
| 4TA16SP16 | -16 | 1-11 1/2 |

ZB

NPSM Bulkhead with Grease Zerk and Jam Nut



| # | Hose | Thread |
|---------|------|--------|
| 4TA2ZB2 | -02 | 1/8-27 |
| 4TA2ZB3 | -03 | 1/8-27 |

ZP

Zerk Male Tapered



| # | Hose | Thread |
|---------|------|--------|
| 4TA2ZP2 | -02 | 1/4-28 |
| 4TA2ZP3 | -03 | 1/4-28 |

Reusable Fittings ▶

Male Pipe Swivel



| # | Hose | Thread |
|----------------|------|--------|
| 90102-021400-0 | -02 | 1/8-27 |

Male Pipe Rigid



| # | Hose | Thread |
|----------------|------|--------|
| 90102-021000-0 | -02 | 1/8-27 |
| 90203-041000-0 | -03 | 1/4-28 |

Female JIC Swivel



| # | Hose | Thread |
|----------------|------|---------|
| 90102-035500-0 | -02 | 3/8-24 |
| 90102-045400-0 | -02 | 7/16-20 |
| 90203-045400-0 | -03 | 7/16-20 |

Tooling reference

100R7 100R8 100R18



T-400



| Dash size | Part type | Part number | Fitting | | 4TA | | TTC/Z w/ sleeve (FF91064) | | | | | |
|-----------|--------------|----------------|---------|---|------|-------|---------------------------|-------|---------|------|-------|------|
| | | | Hose | | 3TR7 | 3TR7N | 3TR8 | 3TR8N | 3TR18CT | 3TR7 | 3TR7N | 3TR8 |
| -02 | Machine Bowl | T-400-8 | X | | | | | | | | | |
| | Collet | ET1000DC-M065S | X | | | | | | | | | |
| | Spacer Ring | ET313SR-120D | X | | | | | | | | | |
| -03 | Machine Bowl | T-400-8 | X | X | | | | | | | | |
| | Collet | ET1000DC-M095S | X | X | | | | | | | | |
| | Spacer Ring | T-400-10 | X | X | | | | | | | | |
| -04 | Machine Bowl | T-400-8 | X | X | X | X | X | X | X | X | X | |
| | Collet | T-400-109C | X | X | X | X | X | X | X | | | |
| | Collet | T-400-121C | | | | | | | | X | X | |
| | Spacer Ring | T-400-37 | | | | | | | X | | | |
| | Spacer Ring | ET313SR-045A | X | X | | | | | | | | |
| | Spacer Ring | ET1000SR-M190D | | | | X | X | | | | | |
| -05 | Spacer Ring | T-400-46 | | | | | | | | X | X | |
| | Machine Bowl | T-400-8 | X | X | | | | | X | | | |
| | Collet | T-400-121C | X | X | | | | | X | | | |
| | Spacer Ring | ET1000SR-M190D | | | | | | | X | | | |
| -06 | Spacer Ring | T-400-47R | X | X | | | | | | | | |
| | Machine Bowl | T-400-8 | X | X | X | X | X | X | X | X | X | X |
| | Collet | T-400-110C | X | X | X | X | X | X | X | X | X | X |
| | Collet | ET401DC-M195S | | | | | | | | X | X | X |
| | Spacer Ring | ET1000SR-M100A | | | | | | | X | | | |
| | Spacer Ring | ET313SR-045A | X | X | | | | | | | | |
| -08 | Spacer Ring | ET313SR-060D | | | | X | X | | | | | |
| | Spacer Ring | T-400-37 | | | | | | | | X | X | |
| | Spacer Ring | T-400-10 | | | | | | | | | X | X |
| | Machine Bowl | T-400-8 | X | X | X | X | X | X | X | X | X | X |
| | Collet | T-400-41C | X | X | X | X | X | X | X | X | X | X |
| | Collet | ET401DC-M230S | | | | | | | | X | X | X |
| | Spacer Ring | ET1000SR-M265D | | | | | | | X | | | |
| | Spacer Ring | ET1000SR-M190D | X | X | | | | | | | | |
| | Spacer Ring | ET1000SR-M395D | | | | X | X | | | | | |
| | Spacer Ring | T-400-62 | | | | | | | | | X | X |
| | Spacer Ring | T-400-10 | | | | | | | X | X | | |

For additional crimp machine configurations and all crimp specs, please visit:

eatonpowersource.com

■ 100R7 ■ 100R8 ■ 100R18



T-460



T-462



T-465



| Dash size | Part type | Part number | Fitting | | | | 4TA | | | TTC/Z w/ sleeve (FF91064) | | |
|-----------|--------------|----------------|---------|------|-------|------|-------|--------|------|---------------------------|------|-------|
| | | | Hose | 3TR7 | 3TR7N | 3TR8 | 3TR8N | 3TR8CT | 3TR7 | 3TR7N | 3TR8 | 3TR8N |
| -02 | Machine Bowl | Integrated | X | | | | | | | | | |
| | Collet | ET1000DC-M065S | X | | | | | | | | | |
| | Spacer Ring | ET313SR-120D | X | | | | | | | | | |
| -03 | Machine Bowl | Integrated | X | X | | | | | | | | |
| | Collet | ET1000DC-M095S | X | X | | | | | | | | |
| | Spacer Ring | T-400-10 | X | X | | | | | | | | |
| -04 | Machine Bowl | Integrated | X | X | X | X | X | | X | X | | |
| | Collet | T-400-109C | X | X | X | X | X | | | | | |
| | Collet | T-400-121C | | | | | | | X | X | | |
| | Spacer Ring | T-400-37 | | | | | | X | | | | |
| | Spacer Ring | ET313SR-045A | X | X | | | | | | | | |
| -05 | Spacer Ring | ET1000SR-M190D | | | X | X | | | | | | |
| | Spacer Ring | T-400-46 | | | | | | | X | X | | |
| | Machine Bowl | Integrated | X | X | | | | X | | | | |
| | Collet | T-400-121C | X | X | | | | X | | | | |
| | Spacer Ring | ET1000SR-M190D | | | | | | X | | | | |
| -06 | Spacer Ring | T-400-47R | X | X | | | | | | | | |
| | Machine Bowl | Integrated | X | X | X | X | X | | X | X | X | X |
| | Collet | T-400-110C | X | X | X | X | X | | | | | |
| | Collet | ET401DC-M195S | | | | | | | X | X | X | X |
| | Spacer Ring | ET1000SR-M100A | | | | | | X | | | | |
| -08 | Spacer Ring | ET313SR-045A | X | X | | | | | | | | |
| | Spacer Ring | ET313SR-060D | | | X | X | | | | | | |
| | Spacer Ring | T-400-37 | | | | | | | X | X | | |
| | Spacer Ring | T-400-10 | | | | | | | | | X | X |
| | Machine Bowl | Integrated | X | X | X | X | X | | X | X | X | X |
| -08 | Collet | T-400-41C | X | X | X | X | X | | | | | |
| | Collet | ET401DC-M230S | | | | | | | X | X | X | X |
| | Spacer Ring | ET1000SR-M265D | | | | | | X | | | | |
| | Spacer Ring | ET1000SR-M190D | X | X | | | | | | | | |
| | Spacer Ring | ET1000SR-M395D | | | X | X | | | | | | |
| -08 | Spacer Ring | T-400-62 | | | | | | | X | X | | |
| | Spacer Ring | T-400-10 | | | | | | | | | X | X |

For additional crimp machine configurations and all crimp specs, please visit:
eatonpowersource.com

Tooling reference

100R7 100R8 100R18



T-420



| Dash size | Part type | Fitting | 4TA | | | | TTC/Z w/ sleeve (FF91064) | | | |
|-----------|--------------|----------------|------|-------|------|-------|---------------------------|------|-------|------|
| | | Hose | 3TR7 | 3TR7N | 3TR8 | 3TR8N | 3TR18CT | 3TR7 | 3TR7N | 3TR8 |
| -02 | Machine Bowl | T-420-26 | X | | | | | | | |
| | Adapter Bowl | T-420-25 | X | | | | | | | |
| | Collet | ET1000DC-M065S | X | | | | | | | |
| | Spacer Ring | ET313SR-120D | X | | | | | | | |
| -03 | Machine Bowl | T-420-26 | X | X | | | | | | |
| | Adapter Bowl | T-420-25 | X | X | | | | | | |
| | Collet | ET1000DC-M095S | X | X | | | | | | |
| | Spacer Ring | T-400-10 | X | X | | | | | | |
| -04 | Machine Bowl | T-420-26 | X | X | X | X | X | X | X | X |
| | Adapter Bowl | T-420-25 | X | X | X | X | X | X | X | X |
| | Collet | T-400-109C | X | X | X | X | X | | | |
| | Collet | T-400-121C | | | | | | X | X | |
| | Spacer Ring | T-400-37 | | | | | X | | | |
| | Spacer Ring | ET313SR-045A | X | X | | | | | | |
| | Spacer Ring | ET1000SR-M190D | | | X | X | | | | |
| -05 | Spacer Ring | T-400-46 | | | | | | X | X | |
| | Machine Bowl | T-420-26 | X | X | | | X | | | |
| | Adapter Bowl | T-420-25 | X | X | | | X | | | |
| | Collet | T-400-121C | X | X | | | X | | | |
| | Spacer Ring | ET1000SR-M190D | | | | | X | | | |
| -06 | Spacer Ring | T-400-47R | X | X | | | | | | |
| | Machine Bowl | T-420-26 | X | X | X | X | X | X | X | X |
| | Adapter Bowl | T-420-25 | X | X | X | X | X | X | X | X |
| | Collet | T-400-110C | X | X | X | X | X | | | |
| | Collet | ET401DC-M195S | | | | | | X | X | X |
| | Spacer Ring | ET1000SR-M100A | | | | | X | | | |
| | Spacer Ring | ET313SR-045A | X | X | | | | | | |
| -08 | Spacer Ring | ET313SR-060D | | | X | X | | | | |
| | Spacer Ring | T-400-37 | | | | | | X | X | |
| | Spacer Ring | T-400-10 | | | | | | | | X |
| | Machine Bowl | T-420-26 | X | X | X | X | X | X | X | X |
| | Adapter Bowl | T-420-25 | X | X | X | X | X | X | X | X |
| | Collet | T-400-41C | X | X | X | X | X | | | |
| | Collet | ET401DC-M230S | | | | | | X | X | X |
| -10 | Spacer Ring | ET1000SR-M190D | X | X | | | | | | |
| | Spacer Ring | ET1000SR-M395D | | | X | X | | | | |
| | Spacer Ring | T-400-62 | | | | | | X | X | |
| | Spacer Ring | T-400-10 | | | | | | | | X |
| -12 | Machine Bowl | T-420-26 | X | X | | | X | | | |
| | Collet | ET1000DC-M250S | X | X | | | X | | | |
| | Spacer Ring | T-400-46R | | | | | X | | | |
| | Spacer Ring | ET420SR-M495A | X | X | | | | | | |
| -16 | Machine Bowl | T-420-26 | X | X | X | X | | X | X | X |
| | Collet | T-420-30C | X | X | X | X | | | | |
| | Collet | ET1000DC-M295S | | | | | | X | X | |
| | Collet | T-420-86C | | | | | | | | X |
| | Spacer Ring | T-420-29 | X | X | | | | | | |
| | Spacer Ring | T-400-10 | | | X | X | | | | |
| | Spacer Ring | ET1000SR-M115D | | | | | | X | X | |
| -20 | Spacer Ring | ET420SR-M215A | | | | | | | | X |
| | Machine Bowl | T-420-26 | X | X | X | X | | X | X | X |
| | Collet | T-421-10C | X | X | X | X | | | | |
| | Collet | ET1001DC-M390S | | | | | | X | X | X |
| | Spacer Ring | ET420SR-M660A | X | X | | | | | | |
| | Spacer Ring | ET425SR-240A | | | X | X | | | | |
| -24 | Spacer Ring | ET420SR-M215A | | | | | | X | X | X |
| | Machine Bowl | T-420-26 | X | X | X | X | | | | |

For additional crimp machine configurations and all crimp specs, please visit:

eatonpowersource.com



■ 100R7 ■ 100R8 ■ 100R18



T-480

| Dash size | Part type | Part number | Fitting | 4TA | | | | TTC/Z w/ sleeve (FF91064) | | | |
|-----------|--------------|----------------|---------|------|-------|------|-------|---------------------------|------|-------|------|
| | | | Hose | 3TR7 | 3TR7N | 3TR8 | 3TR8N | 3TR8CT | 3TR7 | 3TR7N | 3TR8 |
| -02 | Machine Bowl | T-420-26 | X | | | | | | | | |
| | Adapter Bowl | T-420-25 | X | | | | | | | | |
| | Collet | ET1000DC-M065S | X | | | | | | | | |
| | Spacer Ring | ET313SR-120D | X | | | | | | | | |
| -03 | Machine Bowl | T-420-26 | X | X | | | | | | | |
| | Adapter Bowl | T-420-25 | X | X | | | | | | | |
| | Collet | ET1000DC-M095S | X | X | | | | | | | |
| | Spacer Ring | T-400-10 | X | X | | | | | | | |
| -04 | Machine Bowl | T-420-26 | X | X | X | X | X | X | X | X | |
| | Adapter Bowl | T-420-25 | X | X | X | X | X | X | X | X | |
| | Collet | T-400-109C | X | X | X | X | X | | | | |
| | Collet | T-400-121C | | | | | | | X | X | |
| | Spacer Ring | T-400-37 | X | X | | | | X | | | |
| | Spacer Ring | ET1000SR-M190D | | | X | X | | | | | |
| -05 | Spacer Ring | T-400-46 | | | | | | | X | X | |
| | Machine Bowl | T-420-26 | X | X | | | | | | | |
| | Adapter Bowl | T-420-25 | X | X | | | | | | | |
| | Collet | T-400-121C | X | X | | | | | | | |
| -06 | Spacer Ring | ET1000SR-M190D | X | X | | | | | | | |
| | Machine Bowl | T-420-26 | X | X | X | X | X | X | X | X | X |
| | Adapter Bowl | T-420-25 | X | X | X | X | X | X | X | X | X |
| | Collet | T-400-110C | X | X | X | X | X | X | | | |
| | Collet | ET401DC-M195S | | | | | | | X | X | X |
| | Spacer Ring | ET1000SR-M100A | X | X | | | | X | | | |
| | Spacer Ring | ET313SR-060D | | | X | X | | | | | |
| | Spacer Ring | T-400-37 | | | | | | | X | X | |
| -08 | Spacer Ring | T-400-10 | | | | | | | | | X |
| | Machine Bowl | T-420-26 | X | X | X | X | X | X | X | X | X |
| | Adapter Bowl | T-420-25 | X | X | X | X | X | X | X | X | X |
| | Collet | T-400-41C | X | X | X | X | X | X | | | |
| | Collet | ET401DC-M230S | | | | | | | X | X | X |
| | Spacer Ring | ET1000SR-M265D | | | | | | X | | | |
| | Spacer Ring | ET1000SR-M190D | X | X | | | | | | | |
| | Spacer Ring | ET1000SR-M395D | | | X | X | | | | | |
| -10 | Spacer Ring | T-400-62 | | | | | | | X | X | |
| | Spacer Ring | T-400-10 | | | | | | | | | X |
| | Machine Bowl | T-420-26 | X | X | | | | | | | |
| | Collet | ET1000DC-M250S | X | X | | | | | | | |
| -12 | Spacer Ring | T-400-46R | X | X | | | | | | | |
| | Spacer Ring | ET420SR-M495A | | | | | | | | | |
| | Machine Bowl | T-420-26 | X | X | X | X | | X | X | X | X |
| | Collet | T-420-30C | X | X | X | X | | | | | |
| -14 | Collet | ET1000DC-M295S | | | | | | | X | X | |
| | Collet | T-420-86C | | | | | | | | | X |
| | Spacer Ring | T-420-29 | X | X | | | | | | | |
| | Spacer Ring | T-400-10 | | | X | X | | | | | |
| | Spacer Ring | ET1000SR-M115D | | | | | | | X | X | |
| | Spacer Ring | ET420SR-M215A | | | | | | | | | X |
| -16 | Machine Bowl | T-420-26 | X | X | X | X | | X | X | X | X |
| | Collet | T-421-10C | X | X | X | X | | | | | |
| | Collet | ET1001DC-M390S | | | | | | | X | X | X |
| | Spacer Ring | ET420SR-M660A | X | X | | | | | | | |
| | Spacer Ring | ET425SR-240A | | | X | X | | | | | |
| | Spacer Ring | ET420SR-M215A | | | | | | | X | X | X |

For additional crimp machine configurations and all crimp specs, please visit:
eatonpowersource.com

Tooling reference

100R7 100R8 100R18



ET4000



ET4001

For additional crimp machine configurations and all crimp specs, please visit:

eatonpowersource.com



| Dash size | Part type | Fitting | 4TA | | | | TTC/Z w/ sleeve (FF91064) | | |
|-----------|--------------|----------------|------|-------|------|-------|---------------------------|------|-------|
| | | Hose | 3TR7 | 3TR7N | 3TR8 | 3TR8N | 3TR18CT | 3TR7 | 3TR7N |
| | | Part number | | | | | | | |
| -03 | Machine Bowl | ET4000AR-001 | X | X | | | | | |
| | Adapter Bowl | T-410-25 | X | X | | | | | |
| | Collet | ET1000DC-M095S | X | X | | | | | |
| | Spacer Ring | T-410-10 | X | X | | | | | |
| -04 | Machine Bowl | ET4000AR-001 | X | X | X | X | X | X | X |
| | Adapter Bowl | T-410-25 | X | X | X | X | X | X | X |
| | Collet | T-400-109C | X | X | X | X | X | | |
| | Collet | T-400-121C | | | | | | X | X |
| | Spacer Ring | T-410-39 | | | | | X | | |
| | Spacer Ring | ET4000SR-M100A | X | X | | | | | |
| | Spacer Ring | ET4000SR-M190D | | | X | X | | | |
| -05 | Spacer Ring | T-410-78R | | | | | | X | X |
| | Machine Bowl | ET4000AR-001 | X | X | | | X | | |
| | Adapter Bowl | T-410-25 | X | X | | | X | | |
| | Collet | T-400-121C | X | X | | | X | | |
| | Spacer Ring | ET4000SR-M190D | | | | | X | | |
| -06 | Spacer Ring | T-440-79R | X | X | | | | | |
| | Machine Bowl | ET4000AR-001 | X | X | X | X | X | X | X |
| | Adapter Bowl | T-410-25 | X | X | X | X | X | X | X |
| | Collet | T-400-110C | X | X | X | X | X | | |
| | Collet | ET401DC-M195S | | | | | | X | X |
| | Spacer Ring | ET4000SR-M100A | X | X | | | X | | |
| | Spacer Ring | T-440-79R | | | X | X | | | |
| -08 | Spacer Ring | T-410-39 | | | | | | X | X |
| | Spacer Ring | T-400-10 | | | | | | | X |
| | Machine Bowl | ET4000AR-001 | X | X | X | X | X | X | X |
| | Adapter Bowl | T-410-25 | X | X | X | X | X | X | X |
| | Collet | T-400-41C | X | X | X | X | X | | |
| | Collet | ET401DC-M230S | | | | | | X | X |
| | Spacer Ring | T-410-10 | | | | | X | | |
| -10 | Spacer Ring | ET4000SR-M190D | X | X | | | | | |
| | Spacer Ring | T-410-11 | | | X | X | | | |
| | Spacer Ring | T-410-41 | | | | | | X | X |
| | Spacer Ring | T-400-10 | | | | | | | X |
| | Machine Bowl | ET4000AR-001 | | | | | X | | |
| -12 | Collet | T-440-85C | | | | | X | | |
| | Spacer Ring | ET4000SR-M405A | | | | | X | | |
| | Machine Bowl | ET4000AR-001 | X | X | X | X | | X | X |
| -16 | Collet | T-440-85C | X | X | X | X | | | X |
| | Collet | ET4000DC-M320S | | | | | | X | X |
| | Collet | T-440-86C | | | | | | | X |
| | Spacer Ring | ET4000SR-M405A | X | X | | | | | |
| | Spacer Ring | ET4000SR-M180A | | | X | X | | | X |
| -16 | Spacer Ring | ET4000SR-M560A | | | | | | X | X |
| | Machine Bowl | ET4000AR-001 | X | X | X | X | | X | X |
| | Collet | T-470-16C | X | X | X | X | | | |
| | Collet | ET4001DC-M380S | | | | | | X | X |
| | Spacer Ring | ET4000SR-M560A | X | X | | | | | |
| -16 | Spacer Ring | ET525SR-195A | | | X | X | | | |
| | Spacer Ring | T-440-82R | | | | | | X | X |



■ 100R7 ■ 100R8 ■ 100R18



T410 & T440

| Dash size | Part type | Part number | Fitting | | | | 4TA | | | TTC/Z w/ sleeve (FF91064) | | |
|-----------|--------------|----------------|---------|------|-------|------|-------|---------|------|---------------------------|------|-------|
| | | | Hose | 3TR7 | 3TR7N | 3TR8 | 3TR8N | 3TR18CT | 3TR7 | 3TR7N | 3TR8 | 3TR8N |
| -03 | Machine Bowl | T-410-26 | X | X | | | | | | | | |
| | Adapter Bowl | T-410-25 | X | X | | | | | | | | |
| | Collet | ET1000DC-M0955 | X | X | | | | | | | | |
| | Spacer Ring | T-410-10 | X | X | | | | | | | | |
| -04 | Machine Bowl | T-410-26 | X | X | X | X | X | X | X | X | | |
| | Adapter Bowl | T-410-25 | X | X | X | X | X | X | X | X | | |
| | Collet | T-400-109C | X | X | X | X | X | X | | | | |
| | Collet | T-400-121C | | | | | | | X | X | | |
| | Spacer Ring | T-410-39 | | | | | | X | | | | |
| | Spacer Ring | ET4000SR-M100A | X | X | | | | | | | | |
| | Spacer Ring | ET4000SR-M190D | | | | X | X | | | | | |
| -05 | Spacer Ring | T-410-78R | | | | | | | X | X | | |
| | Machine Bowl | T-410-26 | X | X | | | | X | | | | |
| | Adapter Bowl | T-410-25 | X | X | | | | X | | | | |
| | Collet | T-400-121C | X | X | | | | X | | | | |
| | Spacer Ring | ET4000SR-M190D | | | | | | X | | | | |
| -06 | Spacer Ring | T-440-79R | X | X | | | | | | | | |
| | Machine Bowl | T-410-26 | X | X | X | X | X | X | X | X | X | X |
| | Adapter Bowl | T-410-25 | X | X | X | X | X | X | X | X | X | X |
| | Collet | T-400-110C | X | X | X | X | X | X | | | | |
| | Collet | ET401DC-M195S | | | | | | | X | X | X | X |
| | Spacer Ring | ET4000SR-M100A | X | X | | | | X | | | | |
| | Spacer Ring | T-440-79R | | | | X | X | | | | | |
| | Spacer Ring | T-410-39 | | | | | | | X | X | | |
| | Spacer Ring | T-400-10 | | | | | | | | | X | X |
| -08 | Machine Bowl | T-410-26 | X | X | X | X | X | X | X | X | X | X |
| | Adapter Bowl | T-410-25 | X | X | X | X | X | X | X | X | X | X |
| | Collet | T-400-41C | X | X | X | X | X | X | | | | |
| | Collet | ET401DC-M230S | | | | | | | X | X | X | X |
| | Spacer Ring | T-410-10 | | | | | | | X | | X | X |
| | Spacer Ring | ET4000SR-M190D | X | X | | | | | | | | |
| | Spacer Ring | T-410-11 | | | | X | X | | | | | |
| | Spacer Ring | T-410-41 | | | | | | | X | X | | |
| -10 | Machine Bowl | T-410-26 | | | | | | X | | | | |
| | Collet | T-440-85C | | | | | | X | | | | |
| | Spacer Ring | ET4000SR-M405A | | | | | | X | | | | |
| -12 | Machine Bowl | T-410-26 | X | X | X | X | | | X | X | X | X |
| | Collet | T-440-85C | X | X | X | X | | | | | | |
| | Collet | ET4000DC-M320S | | | | | | | X | X | | |
| | Collet | T-440-86C | | | | | | | | | X | X |
| | Spacer Ring | ET4000SR-M405A | X | X | | | | | | | | |
| | Spacer Ring | ET4000SR-M180A | | | | X | X | | | | X | X |
| | Spacer Ring | ET4000SR-M560A | | | | | | | X | X | | |
| -16 | Machine Bowl | T-410-26 | X | X | X | X | | | X | X | X | X |
| | Collet | T-470-16C | X | X | X | X | | | | | | |
| | Collet | ET4001DC-M380S | | | | | | | X | X | X | X |
| | Spacer Ring | ET4000SR-M560A | X | X | | | | | | | | |
| | Spacer Ring | ET525SR-195A | | | | X | X | | | | | |
| | Spacer Ring | T-440-82R | | | | | | | X | X | X | X |

For additional crimp machine configurations and all crimp specs, please visit:
eatonpowersource.com

Tooling reference

100R7 100R8 100R18



ET1000



| Dash size | Part type | Fitting | 4TA | | | TTC/Z w/ sleeve (FF91064) | | | | |
|-----------|--------------|----------------|------|------|-------|---------------------------|------|-------|------|-------|
| | | Hose | 3TR7 | 3TR8 | 3TR8N | 3TR8CT | 3TR7 | 3TR8N | 3TR8 | 3TR8N |
| -02 | Machine Bowl | ET1000AR-001 | X | | | | | | | |
| | Collet | ET1000DC-M065S | X | | | | | | | |
| | Spacer Ring | ET313SR-120D | X | | | | | | | |
| -03 | Machine Bowl | ET1000AR-001 | X | X | | | | | | |
| | Collet | ET1000DC-M095S | X | X | | | | | | |
| | Spacer Ring | T-400-10 | X | X | | | | | | |
| -04 | Adapter Bowl | ET1000AR-001 | X | X | X | X | X | X | X | |
| | Collet | T-400-109C | X | X | X | X | X | | | |
| | Collet | T-400-121C | | | | | | X | X | |
| | Collet | ET401DC-M195S | | | | | | | | |
| | Spacer Ring | T-400-37 | X | X | | | X | | | |
| | Spacer Ring | ET1000SR-M190D | | | X | X | | | | |
| | Spacer Ring | T-400-46 | | | | | | X | X | |
| -05 | Adapter Bowl | ET1000AR-001 | X | X | | | X | | | |
| | Collet | T-400-121C | X | X | | | X | | | |
| | Spacer Ring | ET1000SR-M190D | X | X | | | X | | | |
| -06 | Adapter Bowl | ET1000AR-001 | X | X | X | X | X | X | X | X |
| | Collet | T-400-110C | X | X | X | X | X | | | |
| | Collet | ET401DC-M195S | | | | | | X | X | X |
| | Spacer Ring | ET1000SR-M100A | X | X | | | X | | | |
| | Spacer Ring | ET313SR-060D | | | X | X | | | | |
| | Spacer Ring | T-400-37 | | | | | | X | X | |
| | Spacer Ring | ET1000C-0012 | | | | | | | | X |
| -08 | Adapter Bowl | ET1000AR-001 | X | X | X | X | X | X | X | X |
| | Collet | T-400-41C | X | X | X | X | X | | | |
| | Collet | ET401DC-M230S | | | | | | X | X | X |
| | Spacer Ring | ET1000SR-M265D | | | | | X | | | |
| | Spacer Ring | ET1000SR-M190D | X | X | | | | | | |
| | Spacer Ring | ET1000SR-M395D | | | X | X | | | | |
| | Spacer Ring | T-400-62 | | | | | | X | X | |
| | Spacer Ring | T-400-10 | | | | | | | | X |
| -10 | Collet | ET1000DC-M250S | X | X | | | X | | | |
| | Spacer Ring | T-400-46R | X | X | | | X | | | |
| -12 | Collet | T-420-30C | X | X | X | X | | | | |
| | Collet | ET1000DC-M295S | | | | | | X | X | |
| | Collet | T-420-86C | | | | | | | | X |
| | Spacer Ring | T-420-29 | X | X | | | | | | |
| | Spacer Ring | ET1000C-0012 | | | X | X | | | | |
| | Spacer Ring | ET1000SR-M115D | | | | | | X | X | |
| | Spacer Ring | ET420SR-M215A | | | | | | | | X |
| -16 | Collet | T-421-10C | X | X | X | X | | | | |
| | Collet | ET1001DC-M390S | | | | | | X | X | X |
| | Spacer Ring | ET420SR-M660A | X | X | | | | | | |
| | Spacer Ring | ET425SR-240A | | | X | X | | | | |
| | Spacer Ring | ET420SR-M215A | | | | | | X | X | X |

For additional crimp machine configurations and all crimp specs, please visit:

eatonpowersource.com

100R7 100R8 100R18



FT1380



ET1187



FT1390



| Dash size | Machine | Die cage part number | Fitting | | | | 4TA | | | | TTC/Z w/ sleeve (FF91064) | | | |
|-----------|---------|----------------------|---------|-------|--------|-------|-------|--------|-------|-------|---------------------------|-------|-------|--------|
| | | | Hose | | 3TR7 | 3TR8 | 3TR8 | 3TR8CT | 3TR7 | 3TR8 | 3TR8 | 3TR8 | 3TR8 | 3TR8 |
| | | | 100R7 | 100R8 | 100R18 | 100R7 | 100R8 | 100R18 | 100R7 | 100R8 | 100R18 | 100R7 | 100R8 | 100R18 |
| -02 | FT1380 | FT1380-275-M090 | 69 | | | | | | | | | | | |
| | ET1187 | FT1380-275-M090 | 69 | | | | | | | | | | | |
| | FT1390 | FT1307-200-M090 | 223 | | | | | | | | | | | |
| -03 | FT1380 | FT1380-275-M120 | 49 | 49 | | | | | | | | | | |
| | ET1187 | FT1380-275-M120 | 49 | 49 | | | | | | | | | | |
| | FT1390 | FT1307-200-M120 | 205 | 205 | | | | | | | | | | |
| -04 | FT1380 | FT1380-200-M150 | 40 | 40 | | | | 40 | | 80 | 80 | | | |
| | ET1187 | FT1380-200-M165 | | | | 45 | 45 | | | | | | | |
| | FT1380 | FT1380-275-M150 | 40 | 40 | | | | 40 | | 80 | 80 | | | |
| -05 | FT1390 | FT1307-200-M150 | 328 | 328 | 271 | 271 | 323 | | 246 | 246 | | | | |
| | FT1380 | FT1380-200-M150 | 100 | 100 | | | | 108 | | | | | | |
| | ET1187 | FT1380-275-M150 | 100 | 100 | | | | 108 | | | | | | |
| -06 | FT1390 | FT1307-200-M150 | 262 | 262 | | | | 270 | | | | | | |
| | FT1380 | FT1380-200-M180 | 55 | 55 | 35 | 35 | 60 | | 105 | 105 | | | | |
| | ET1187 | FT1380-275-M180 | 55 | 55 | 35 | 35 | 60 | | 105 | 105 | | | | |
| -07 | FT1380 | FT1380-200-M200 | | | 35 | | | | | | | | | |
| | ET1187 | FT1380-275-M200 | | | 35 | | | | | | | | | |
| | FT1380 | FT1380-200-M210 | | | | | | | | 35 | 35 | | | |
| -08 | FT1390 | FT1380-275-M210 | | | | | | | | 35 | 35 | | | |
| | FT1380 | FT1380-200-M210 | 80 | 80 | 115 | 115 | 90 | | | | | | | |
| | ET1187 | FT1380-275-M210 | 80 | 80 | 115 | 115 | 90 | | | | | | | |
| -09 | FT1380 | FT1380-200-M240 | | | | | | | 50 | 50 | 100 | 100 | | |
| | ET1187 | FT1380-275-M240 | | | | | | | 50 | 50 | 100 | 100 | | |
| | FT1390 | FT1307-200-M210 | 243 | 243 | 288 | 288 | 260 | | | 223 | 223 | 237 | 237 | |
| -10 | FT1380 | FT1380-200-M240 | | | | | | | | | | | | |
| | ET1187 | FT1381-200-M280 | | | | | | | 15 | | | | | |
| | FT1390 | FT1307-200-M240 | 94 | 94 | | | | | | | | | | |
| -11 | FT1380 | FT1380-200-M280 | | | | | | | 15 | | | | | |
| | ET1187 | FT1381-200-M280 | | | | | | | 15 | | | | | |
| | FT1390 | FT1307-200-M280 | 94 | 94 | | | | | | | | | | |
| -12 | FT1380 | FT1380-200-M320 | | | | | | | | 35 | 35 | 50 | 50 | |
| | ET1187 | FT1380-275-M320 | | | | | | | | 35 | 35 | 50 | 50 | |
| | FT1390 | FT1381-200-M320 | | | | | | | | 35 | 35 | 50 | 50 | |
| -13 | FT1380 | FT1381-275-M320 | | | | | | | | | | 50 | 50 | |
| | ET1187 | FT1381-200-M320 | | | | | | | | | | | | |
| | FT1390 | FT1307-200-M320 | 160 | 160 | 224 | 224 | | | 363 | 363 | | | | |
| -14 | FT1380 | FT1380-200-M320 | | | | | | | | 205 | 205 | 241 | 241 | |
| | ET1187 | FT1380-275-M370 | 30 | 30 | 45 | 45 | | | 155 | 155 | 45 | 45 | | |
| | FT1390 | FT1380-200-M370 | 30 | 30 | 45 | 45 | | | 155 | 155 | 45 | 45 | | |
| -15 | FT1380 | FT1380-275-M370 | 30 | 30 | 45 | 45 | | | 155 | 155 | 45 | 45 | | |
| | ET1187 | FT1381-200-M370 | 30 | 30 | 45 | 45 | | | 155 | 155 | 45 | 45 | | |
| | FT1390 | FT1381-275-M370 | 30 | 30 | 45 | 45 | | | 155 | 155 | 45 | 45 | | |
| -16 | FT1380 | FT1382-200-M370 | 30 | 30 | 45 | 45 | | | 155 | 155 | 45 | 45 | | |
| | ET1187 | FT1382-275-M370 | 30 | 30 | 45 | 45 | | | 155 | 155 | 45 | 45 | | |
| | FT1390 | FT1307-200-M370 | 211 | 211 | 223 | 223 | | | 329 | 329 | 334 | 334 | | |

Target setting in matrix

For additional variable crimp specs
for other machines, please visit:
eatonpowersource.com

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 | | Resistance Rating Key | | | |
|-------------------------------|---------------|--------------------------------|---------------|--------------------------------|-------|
| N = Nylon | H = Polyester | G = Good | | P = Poor | |
| | | L = Limited | | NT = Not Tested | |
| N H | | N H | | N H | |
| Acetaldehyde | G G | Carbon Bisulfide | G L | +Ethylene Glycol | G G |
| Acetic Acid | L L | Carbon Disulfide | G L | Ethylene Oxide | G L |
| Acetic Anhydride | L L | Carbon Monoxide | G G | Fatty Acid | G G |
| Acetone | G L | Carbon Tetrachloride | G P | Ferric Chloride | L NT |
| Acetyl Bromide | P P | Carbonic Acid | G L | Ferric Sulphate | G G |
| Acetyl Chloride | P P | Castor Oil | G L | Fluoboric Acid | NT P |
| Acetylene | G G | Caustic Potash (>20%) | L L | Fluorine | P P |
| Air | G G | Caustic Potash (<20%) | G L | Fluorosilicic | NT NT |
| *Alcohols | G L | Caustic Soda (>20%) | L L | Formaldehyde | G L |
| Aluminum Chloride | P NT | Caustic Soda (<20%) | G L | Formic Acid | P P |
| Aluminum Sulphate | G NT | Cellusolves Union Carbide | G P | Freon | G L |
| Alums | P NT | Cellulubes Celanese (Hydraulic | *Fruit Juices | | G G |
| Ammonia Gas | P P | Fluid, Phosphate Ester Base) | G P | Fuel Oil (Aromatic Gas) | |
| Ammonium Chloride | G G | Chloracetic Acid | P P | 100 Octane | G G |
| Ammonium Hydroxide | P P | Chloroform | G P | Fuel Oil | G G |
| Ammonium Nitrate | G L | Chlordane | G G | Furfuryl Alcohol | G G |
| Ammonium Phosphate | G L | Chlorinated Solvents | G P | Gallic Acid (<20%) | G L |
| Ammonium Sulphate | G L | Chlorine (Dry) | P P | ** Gas (Natural) | G G |
| Amyl Acetate | G L | Chlorine (Water) (<20%) | L P | Gas Oil | G GL |
| Amyl Alcohol | G G | Chromic Acid | P P | Gasoline | G G |
| Anethole | G NT | Chromium Salts | G G | Gasoline (Aromatic) | G G |
| Aniline | L P | *Cider | G G | Gasoline (Non-Aromatic) | G G |
| Animal Oils | G G | Citric Acid | G L | Gelatin | G G |
| Antimony Salts | G G | Coal Gas | G G | Glucose | G G |
| Apoclor Monsanto (Chlorinated | | Copper Chloride | L G | Glue (Depends on type) | G G |
| Hydrocarbon Hydraulic Fluid) | G L | Copper Sulphate | G G | +Glycerine | G G |
| Aromatic Hydrocarbons | G L | *Corn Oil | G G | +Glycol | G G |
| Arsenic Salts | G G | Cottonseed Oil | G G | Greases | G G |
| Asphalt | G G | Creosote | P P | Heavy Water (D2O) | G G |
| Auto Transmission Fluid | G G | Cresols | P P | Heptane | G G |
| Barium Chloride | G G | Cresylic Acid | P P | Hexane | G G |
| Barium Salts | G G | Crude Petroleum Oil | G L | +Houghto Safe Houghton 600 | |
| Basic Copper Arsenate | G G | Cupric Sulphate | L L | Series (Hyd. Fluid Water | |
| Benzaldehyde | G G | Cyclohexane | G G | Glycol Base) | G L |
| Benzene | G L | Cyclohexanone | G G | +Houghto Safe Houghton 1000 | |
| Benzoic Acid | G P | Decalin | G NT | Series (Phosphate Ester | |
| Benzol (Benzene) | G L | Diacetone Alcohol | G L | Base) | G L |
| Benzyl Alcohol | L L | Diammonium Phosphate | G L | Hydraulic Fluid Petroleum Base | G G |
| Borax | G G | Dibutyl Phthalate | G L | +Hydraulic Fluid Water Glycol | |
| Bordeaux Mixture | G G | Diesel Fuel | G G | Base | G G |
| Boric Acids | G G | Diethanolamine (20% conc.) | G L | +Hydraulic Fluid | |
| Boric Copper Sulphate | G G | Diethyl Ether | G L | Phosphate Ester | G L |
| Bromine | P P | Diocetyl Phosphate | G L | Hydraulic Oil | G G |
| Butanol | G G | Diocetylphthalate | G L | Hydrochloric Acid (10%) | G P |
| * Butter | G G | Enamels | G G | Hydrocyanic Acid | P NT |
| Butyl Acetate | G L | Essential Oils | G G | Hydrofluoric Acid | P P |
| Calcium Arsenate | G G | * Ethanol | G L | Hydrogen Gas | G G |
| Calcium Bisulphide | G G | Ether | G L | Hydrogen Peroxide (dil.) | G G |
| Calcium Chloride | G G | Ethyl Acetate | G L | Hydrogen Peroxide (conc.) | P P |
| Calcium Hydroxide (<20%) | G L | * Ethyl Alcohol | G L | Hydrogen Sulphide | L L |
| Calcium Hypochlorite | G L | Ethyl Chloride | G P | +Hydrolube Union Carbide— | |
| Calcium Salts | G G | Ethylene Chlorhydrin | P P | (Hydraulic Fluid Water Glycol | |
| Carbolic Acid | P P | Ethylene Dichloride | G P | Base) | G L |

| N H | N H | N H |
|--|---|-------------------------------|
| Hrus Shell 902 Hydraulic Fluid (Water-Oil Emulsion) | Oleic Acid | G G |
| Isocyanates | OS 45 Monsanto Hydraulic Fluid (Silicate Ester Base) | G L |
| Isopropyl Acetate | Oxalic Acid (-30%) | G L |
| Kerosene | Oxygen | Refer to Factory |
| Ketones | Ozone | G G |
| Lacquer Solvents | Paint (Oil Base) | G G |
| Lactic Acid | Paint Solvents (Oil Base) | G L |
| Lard | Palmitic Acid | G G |
| Lead Arsenate | Pentane | G G |
| Lead Sulphate | Perchloric Acid | P P |
| Lead Tetramethyl | Perchlorethylene | G P |
| Lime | Petroleum Oils (Sour) | G L |
| Linseed Cake | Petroleum Oils (Refined) | G G |
| Linseed Oil | Phenolates | L L |
| Lubricating Oils, Petroleum | Phenols | P P |
| Base | Phosphoric Acid | G P |
| †Lubricating Oils, Diester Base | Picric Acid | L P |
| Magnesium Chloride | Potash (Potassium Hydroxide) | L P |
| Magnesium Hydroxide (<20%) | Potassium Chloride | G G |
| Magnesium Sulphate | Potassium Hydroxide | Tartaric Acid |
| Maleic Acid | (50% conc.) | L P |
| Mercuric Chloride | Potassium Nitrate | G G |
| Mercury | Potassium Permanganate | Tributyl Phosphate |
| **Methane | (5% conc.) | P P |
| Methanol | Potassium Sulphate | G G |
| Methyl Acetate | Propane | G G |
| Methyl Bromide | †Pydraul (Stauffer) F-9, 150, 600, | †Trisodium Phosphate Solution |
| Methyl Chloride | 625 | G L |
| Methyl Sulphate | Pyrethrum | G G |
| Methylethylketone (MEK) | Pyridine | L L |
| Methylisobutylketone (MIBK) | †Sea Water | G G |
| *Milk | †Skydrol Monsanto 500, 7000 | G P |
| Mineral Oil | †Soap Solution (conc.) | G G |
| Molasses | * † Soda Water | G G |
| Mustard | Sodium Bicarbonate | G G |
| Naphtha | Sodium Bisulfite | G G |
| Naphthalene | Sodium Borate | G G |
| Nickel Chloride | Sodium Carbonate | G G |
| Nicotine | Sodium Chloride | G G |
| Nitric Acid (<20%) | Sodium Cyanide | G G |
| Nitric Acid (>20%) | Sodium Hydroxide (<20%) | G L |
| Nitrobenzene | Sodium Hypochlorite | L L |
| * Nitrous Oxide | Sodium Nitrate | G G |
| Oil | †Sodium Phosphate Solution | G G |
| * Oil of Turpentine | Sodium Silicate | G G |
| | | |

* Does not imply NSF or FDA compliance

† Recommended operating temperature not to exceed +150°F (+66°C)

** Does not imply AGA or UL compliance

%o 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 |

ENGINEERING
TOMORROW



Danfoss can accept no responsibility for possible errors in catalogs, brochures, and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequent changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.