



NT52 Cryogenic Couplings

Serving The Nuclear Industry

Canada 
www.thorburnflex.com

NT52 Series - Non-Valved Full Flow Cryogenic Couplings



Temperature ranges down to -269°C (452°F)

Thorburn's NT52 Series cryogenic quick coupling system is designed, engineered & manufactured to provide safe, reliable, leak tight quick connect & disconnect for cryogenic fluids.

Thorburn's NT52 is an ideal quick coupling to replace threaded union type-connectors where speed and convenience is a requirement. The NT52 standard seals are made of UHMW polyethylene making it ideally suited for radio- active nuclear applications.

Features & Benefits

Ball Bearing Locking Mechanism

- Multiple ball bearings for better load distribution
- Live swivel to eliminate torsion load
- Facilitates alignment during connection

Extended Sleeve Holder

- Larger gripping space

Compression Spring

- Automatically returns the sleeve to its original position

Standard UHMW Polyethylene Seal

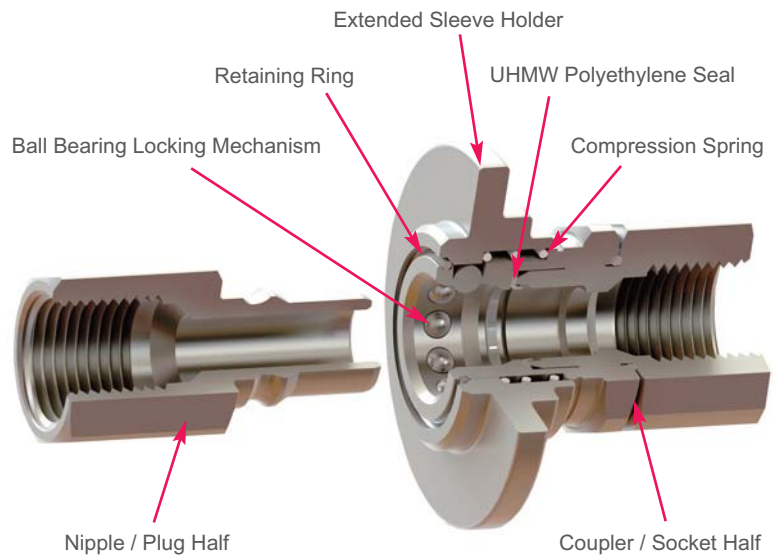
- Ideal for liquid nitrogen service in radioactive environments

Ultrasonic Cleaning

- Removes contaminants & minimizes frost build up

Quality & Design

- ASME Section III/CSA N285.0 Classes 1, 2, 3 & 6
- Full traceability of all pressure retaining components
- CRN for all Canadian Provinces

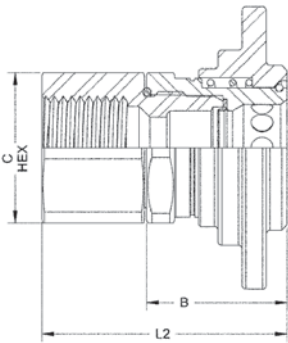


Benefits of UHMW PE (Ultra High Molecular Weight Polyethylene) Seal

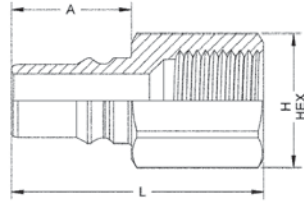


- Low temperature up to -452°F without material degradation
- Self-lubricated material with low coefficient of friction, that reduces force required to connect / disconnect coupling halves
- High impact strength and abrasion resistance that outwears carbon steel 10 to 1
- Good chemical resistance to organic solvents, de-greasing agents and electrolytic attack.
- Very low moisture absorption that prevents ice formation when used for low temperature fluids

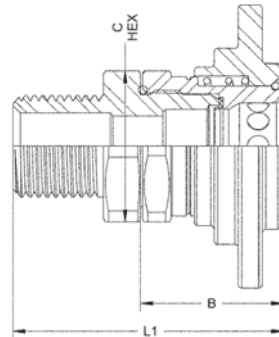
NT52 Series Technical Data



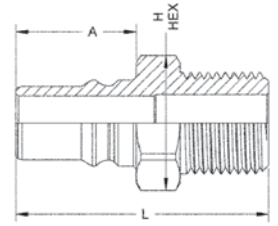
NT52 Female Coupler



NT52 Female Nipple



NT52 Male Coupler



NT52 Male Nipple

NT52 Coupler Dimensions

SIZE (inch)	B	C HEX	L1	L2
3/8	1.05	1	1.86	1.79
1/2	1.17	1 1/4	2.23	2.04
3/4	1.31	1 1/2	2.44	2.18
1	1.42	1 7/8	2.74	2.42
1 1/2	1.67	2 1/2	3.20	2.67
2	2.17	2 3/4	3.88	3.17

NT52 Nipple Dimensions

SIZE (inch)	A	H HEX	L
3/8	0.875	7/8	1.69
1/2	1.000	1	2.06
3/4	1.140	1 1/2	2.27
1	1.250	1 3/4	2.57
1 1/2	1.500	2 1/2	3.03
2	2.000	2 7/8	3.71

Working Pressure & Force To Connect

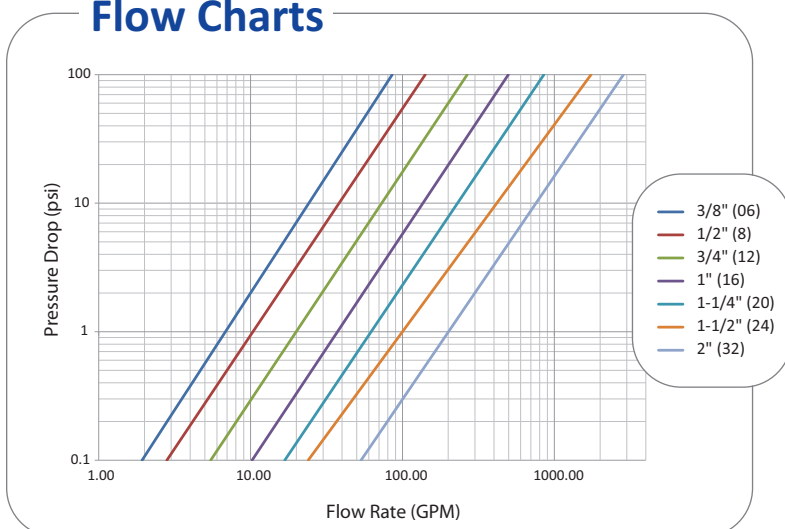
SIZE (inch)	3/8	1/2	3/4	1	1 1/2	2
Working Pressure (psi)*	500	500	500	500	150	150
Force To Connect (lbs)	2	2	4	5	7	10

* Minimum working pressure is base on a 4:1 safety factor. Higher pressures available.

Thorburn's 1/2 Inch NT52 Qualification Testing

Qualification testing under critical operating conditions is required to predict the reliability of a sound quick coupling design. Thorburn's NT52 Series Cryogenic couplings are liquid nitrogen tested at -196°C (-320°F) and pressure tested to a minimum of 4 times operating pressure. Further testing includes pneumatic testing at 100 psi submerged in water to verify sealing integrity.

Flow Charts



Hydrostatic test at 4000 psi



Pneumatic test at 100 psi



Cryogenic test bench at -320°F



Liquid nitrogen test

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ISIR Romania | CNCAN Romania | EN 13480-2002 | HAF 604 China | TSG China
 (CRN for all Canadian provinces)

Quick Connect/Disconnect When Seconds Count



To disconnect, retract the sleeve



With sleeve retracted, pull nipple out



Fully disconnected in seconds

How To Order NT52 Series Couplings

Part Number Example & Description

(Part number must follow the order listed below)

NT52-08-P-C-08-F-U-S6

(Part number in imperial units. ID is always in 1/16" example: 16=1", 24=1 1/2", 32=2")

NT52	Cryogenic Quick Coupling System
08	(Code 08) Inside Diameter 1/2 Inch
P	(Code P) Straight Through Type
C	(Code C) Coupler Half
08	(Code 08) End Fitting Size 1/2 Inch
F	(Code F) Female NPTF End Fitting
U	(Code U) Seal Material UHMW
S6	(Code S6) Coupling Material 316SS

Ordering Codes

Size	Body Type	Seal Material
04 = 1/4"	P = Straight Through	U = UHMW
06 = 3/8"		T = PTFE
08 = 1/2"	C = Coupler N = Nipple	X = Other (Specify)
12 = 3/4"		S6 = 316SS
16 = 1"	M = Male NPTF F = Female NPTF	
20 = 1 1/4"		
24 = 1 1/2"		
32 = 2"		



Over 50 years of flexible piping experience
 waiting to serve you...