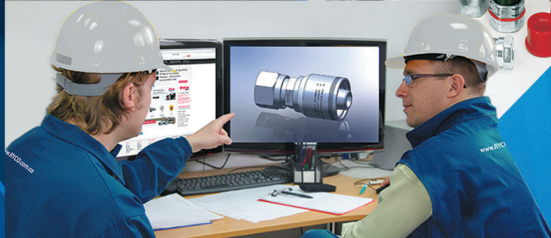




PRODUCT GUIDE

STAINLESS STEEL COUPLINGS



RYCO THE COMPANY

RYCO Hydraulics started manufacturing hoses, fittings and filters in 1946. As the hydraulics industry evolved, the Company expanded its range and the main product line soon became high-pressure hydraulic hose and fittings. RYCO Hydraulics' simple belief of "Higher Technology Equals Greater Performance" applies throughout the Company. The Company's research and development centres and testing facilities are dedicated to developing innovative products and pioneering new processes in fluid conveying systems technology. Our specialised equipment and technology enable us to manufacture our large range of products efficiently and cost effectively.

"HIGHER TECHNOLOGY EQUALS GREATER PERFORMANCE"

RYCO MISSION STATEMENT

Our Mission is to listen to our customers and deliver the highest quality and technologically superior fluid conveying connection products and solutions.

RYCO COMPANY VISION

Our vision is to be the premier supplier and service provider of choice in every market we participate in.

RYCO. THE QUALITY

RYCO Hydraulics is certified to current version of AS/NZS ISO 9001 "Quality Management Systems - Requirements" by NATA Certification Services International (NCSI - Registration No. 7029). Company Policy is to supply products and services that meet or exceed our industry standards. These standards include SAE, EN (DIN), AS, ISO, JIS, BS and BCS. The bottom line in Quality Control (QC) & Quality Assurance (QA) is Customer Confidence & Customer Satisfaction.

OUR AIM IS ZERO DEFECTS

RYCO PRODUCT IDENTIFICATION

All RYCO Hydraulics products are clearly branded with a unique RYCO Hydraulics part number and batch code, where practical. In today's quality conscious world, RYCO's invaluable batch coding system takes traceability and customer assurance to new levels. Not everyone is an expert in thread identification. Time and money are often wasted identifying goods or despatching the wrong item. Using clearly branded RYCO products reduces the chance of error, saving you time and money.

IF IT'S NOT BRANDED - IT'S NOT RYCO

RYCO WAREHOUSE & DISTRIBUTION

At RYCO Hydraulics, we understand that when you need your product, you need it fast. Our network of warehouses and distributors gives the greatest product availability to our customers. Our comprehensive ordering and despatch system ensures that your orders are correct before leaving the warehouse.

WE PRIDE OURSELVES ON SHIPPING CORRECTLY

DISCLAIMER: We reserve the right to alter the design, or discontinue any of the company's products or services without notice. While every effort has been made to ensure the accuracy of the information contained in this publication, our Company Policy of continual research and product development necessitates changes and refinements which may not be reflected in the following pages. If in doubt, please contact your nearest sales office. Illustrations are not to scale, and are indicative only.

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INTRODUCTION

ABOUT RYCO – QUALITY ACCREDITATION

RYCO Hydraulics is committed to the objective of zero defects.

As a manufacturer of quality hydraulic hose and fittings, and now a major supplier for a comprehensive range of industrial hoses, fittings and lubrication products, RYCO Hydraulics ensures that our products are accredited by independent third party organisations.

RYCO Hydraulics recommends SAE J1273 as a guide to the selection, manufacture, installation and servicing of hydraulic hose assemblies. RYCO Hydraulics complies with and exceeds third party accreditations as well as international ISO and EN (DIN) standards.

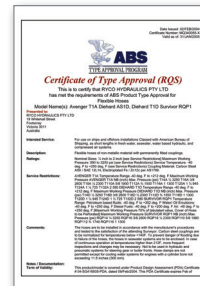
RYCO Hydraulics specifically design and manufacture hydraulic hose and fittings to “match” each other for greater performance and safety. Use only hose assemblies that consist of RYCO “matched” hydraulic hose with RYCO “matched” fittings.

RYCO Hydraulics testing and evaluation processes guarantee the performance and quality required to meet the demands of today’s applications to safely convey fluids at high pressure.

RYCO Hydraulics are proud members of, and contribute to, the world’s main industry groups including:

ABS	American Bureau of Shipping
AGA	Australian Gas Association
BSI	British Standards Institution
CCS	China Classification Society
DNV-GL	Det Norske Veritas
BV	Bureau Veritas
KR	Korean Register
LR	Lloyd's Register
MA-KA	State Administration of Work Safety
MDG 41	Australia - Mechanical Design Guidelines
MED	Marine Equipment Directive
MSHA	U.S. Department of Labor, Mine Safety and Health Administration
NAHAD	National Association of Hose and Accessories Distributors (USA)
NFPA	National Fluid Power Association (USA)
P-GOST	Quality & Safety Declaration of Conformity
RMA	Rubber Manufacturers Association
SAE	SAE International
USCG	US Coast Guard

RYCO Hydraulics
complies with **SAE J343**
and **SAE J517** standards, and with
the relevant ISO, EN and DIN standards.



RYCO are proud members of:



DNV-GL



SAE



NAHAD



ABS



NFPA



LR



BV



P-GOST



KR



MA-KA



USCG



MED



MSHA



AGA



BSI



RMA



RYCO MDG 41



CCS

ABOUT RYCO – ACCREDITED HOSE ASSEMBLIES

RYCO manufactures and delivers marine and mining certified hydraulic hose assemblies throughout our network. Our hose assemblies are made using matched RYCO hose and RYCO fittings to deliver maximum performance and enduring reliability.



MARINE

RYCO accredited hydraulic hose assemblies for marine service can be found on ocean liners, navy vessels, commercial catamarans and in submarine fleets.

Independently accredited to meet all certification requirements of the Marine Equipment Directive (MED), including severe fire exposure requirements, RYCO certified hose assemblies will continue to perform as expected during normal operation, or in time of emergency.

RYCO maintains and continues to grow our range of DNV-GL, BV, ABS, and U.S. Coast Guard (USCG) type-approved hose for hydraulic and fuel service on vessels. Hose assemblies that meet DNV, GL, BV, ABS, and USCG requirements are integral to the safe and reliable operation of these on-board systems, providing assurance that the assemblies will deliver the required performance and reliability.



MINING

RYCO hydraulic hose assemblies are used in the toughest mining applications around the world and are of the highest standard, meeting and exceeding additional performance standards specific to the mining industry.

Where labelled, RYCO hoses are U.S. MSHA approved and certified in accordance with relevant part of MSHA Code of Federal Regulations (CFR), Title 30 for products taken into mines.

RYCO hoses that are branded as FRAS (Flame Resistant and Anti-Static) means the hose meets the Flame Resistance and Electrical Conductivity requirements for hose used in underground mines as outlined in AS 2660 when tested in accordance with AS1180.10B and AS 1180.13A. FRAS hoses are also MSHA approved for flame resistance.

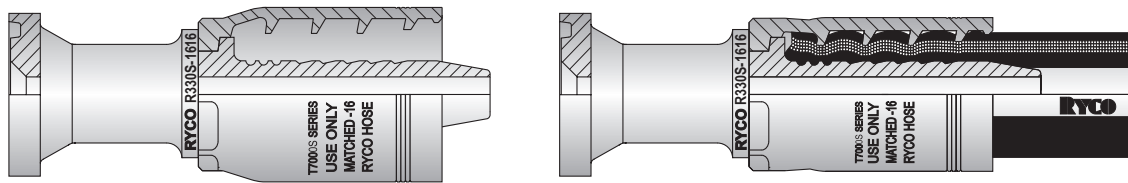
Mechanical Design Guideline Number 41 (MDG 41) is a 'best practice' document created in response to an increasing number of high-pressure fluid injuries on Australian mine sites, and has been adopted throughout the global mining community.

MDG 41 seeks to guide companies in achieving compliance with the OH&S Act and Regulations through implementing industry best practices, assessing workplace hazards and to implement systems, products and programs in order to eliminate or minimise the risk they present.

RYCO hose assemblies address key product-related issues highlighted by MDG 41. Our clients adhere to MDG 41's risk management strategies by using RYCO hydraulic hose and fittings and systems that are designed in synergy to create a safe, verified hose assembly and environment.

BITELOK ONE-PIECE STAINLESS STEEL CRIMP COUPLINGS

RYCO BITELOK Crimp Couplings are permanently attached fittings, assembled onto the hose with a swaging press.



RYCO BITELOK One-Piece Crimp Couplings have the ferrule already attached to the hose insert at the factory. This eliminates the possibility of selecting the wrong ferrule type when fabricating hose assemblies, which can cause failure of the assembly.

Each BITELOK One-Piece Crimp Coupling Series suits specific styles of hose, as shown in the table below. T2000S, T4000S, T6000S, T7000S, TP000S One-Piece Crimp Couplings Series can be used on more than one hose style - only the finished crimp diameter changes.

BITELOK One-Piece Crimp couplings eliminate the need to "skive" the cover off the hose before attaching the couplings even for Spiral reinforced hoses. This makes assembly simple, quick and efficient. Simply push the coupling onto the hose to the correct mark length, and crimp the ferrule. The teeth inside the ferrule BITE down through the cover to LOK onto the reinforcement wires*.

*T4000S Series for One and Two Braid Textile reinforced hoses do not bite down to the textile reinforcement.

BITELOK SERIES	SUITS HOSE TYPE	RYCO HOSE SERIES AND SIZES
T2000S	One and Two Wire Braided Hoses TWO SERIES CODE GROOVES AT END OF FERRULE	For RYCO Hose Series T1D, T1F, T1S, T2D, T2S, T2C, TXA2D, TJ2D, RQP1, RQP2, JS6000, JS4000, up to size -48. For RYCO Hose Series T3000, T3600, T4000, T5000, T6000, EC, E2, BT1. For RYCO Hose Series CS1000, MS1000, D2B up to -32.
T4000S	Some One and Two Textile Braided Hoses THREE SERIES CODE GROOVES AT END OF FERRULE	For RYCO Hose Series SR, SRF and SRX sizes -12 to -48. For RYCO Hose Series M2, M2G, PL1, PL1D and RQP6 sizes -4 to -12. For RYCO Hose Series MP1 sizes -4 to -20. For RYCO Hose Series RQP5 and T5 sizes -4 to -12.
T7000S	Selected Spiral Hoses Some One and Two Wire Braided Hoses FOUR SERIES CODE GROOVES AT END OF FERRULE	For RYCO Hose Series H3000, H4000, H12D, H12S, D2B all sizes. For RYCO Hose Series H5000 up to -24. For RYCO Hose Series H6000 up to -20. For RYCO Hose Series R4SP (cover must be skived) and R4SH (sizes -20 to -32).
TP000S	Thermoplastic Hose TWO SERIES CODE KNURLS (ONE AT EACH END OF FERRULE)	For RYCO Hose Series TP7, TP7N, TP7T, TP7TN, TP8, TP8N, TP8T, TP8TN, TP3000
TT000S	Stainless Steel Braid Teflon Hose TWO SERIES CODE GROOVES (ONE AT EACH END OF FERRULE)	For RYCO Hose Series RTH1.

MALE STRAIGHT

T2010S	T2013S	T2090S	T2030S	T2650S	T2630S	T2840S		
T4010S	T4013S	T4090S	T4030S			T4840S		
T7010S	T7013S	T7090S	T7030S		T7630S	T7840S		
TP010S		TP090S	TP030S	TP650S	TP630S	TP840S		
TT010S		TT090S	TT030S					
								
BSPT MALE	BSPP MALE	NPT MALE	JIC MALE	METRIC DKL MALE 24° CONE	METRIC DKS MALE 24° CONE	ORFS MALE		

FEMALE STRAIGHT & FEMALE 45°

T2020S	T2020NS	T2040S	T2501S	T2711S	T2800S	T2060S	T2270S	T2250S
T4020S	T4020NS	T4040S			T4800S			T4250S
T7020S	T7020NS	T7040S	T7501S	T7711S	T7800S		T7270S	T7250S
TP020S	TP020NS	TP040S	TP501S	TP711S	TP800S		TP270S	TP250S
TT020S								
								
BSPP FEMALE	NPSM FEMALE	JSEAL™/JIC FEMALE	METRIC DKOL FEMALE 24° CONE	METRIC DKOS FEMALE 24° CONE	ORFS FEMALE	BSPP FEMALE 45° ELBOW	BSPP FEMALE 45° TUBE BEND	SEAL™/JIC FEMALE 45° TUBE BEND

FEMALE 45° (CONT)

FEMALE 90°

T2510S	T2720S	T2810S	T2050S	T2260S	T2240S	T2520S	T2730S	T2823S
		T4810S		T4260S	T4240S			
	T7720S	T7810S		T7260S	T7240S		T7730S	T7823S
TP510S	TP720S	TP810S		TP260S	TP240S	TP520S		TP823S
				TT260S				
								
METRIC DKOL FEMALE 24° CONE 45° TUBE BEND	METRIC DKOS FEMALE 24° CONE 45° TUBE BEND	ORFS FEMALE 45° TUBE BEND	BSPP FEMALE 90° ELBOW	BSPP FEMALE 90° TUBE BEND	SEAL™/JIC FEMALE 90° MEDIUM BEND	METRIC DKOL FEMALE 24° CONE 90° TUBE BEND	METRIC DKOS FEMALE 24° CONE 90° TUBE BEND	ORFS FEMALE 90° SHORT BEND

COUPLINGS

PICTORIAL INDEX

T2820S	T2640S	T2130S	T2150S	T2170S
T4820S		T4130S	T4150S	T4170S
T7820S	T7640S	T7130S	T7140S	T7150S
TP820S	TP640S			

FEMALE 90° (CONT)



ORFS FEMALE
90° MEDIUM BEND

SALVAGE/ STANDPIPE



METRIC
STANDPIPE

SAE FLANGE CODE 61



CODE 61
FLANGE



CODE 61
FLANGE
22.5° TUBE BEND



CODE 61
FLANGE
45° TUBE BEND



CODE 61
FLANGE
90° TUBE BEND

SAE FLANGE CODE 62



CODE 62
FLANGE



CODE 62
FLANGE
45° TUBE BEND



CODE 62
FLANGE
90° TUBE BEND

SPECIAL FLANGE RYCO CODE 62C



R62C
FLANGE
45° TUBE BEND

8000S PUSH-ON COUPLINGS FOR PL1, PL1D, PL300 AND RQP6 SERIES HOSE

PL1, PL1D PL300 and RQP6 Hose simply pushes on to 8000S Series couplings. Clamps are required for critical applications, and when Working Pressure exceeds 50% of the Maximum Static Working Pressure. Do not overtighten Clamps as this will damage hose.

8010S

8020S



BSPT
MALE



BSPP
FEMALE

WORKING PRESSURE OF HOSE ASSEMBLIES

Working Pressure of each Hose Coupling End Style Termination is shown in the Technical section. In most cases, the Working Pressure of the Hose Coupling End Style Termination that can be chosen for a particular hose exceeds the Maximum Working Pressure of the Hose. It is possible however, to select a Hose Coupling with an End Style having a lower Working Pressure than the Hose. In this case, as noted in SAE J516 and SAE J517, the rated Working Pressure of the Hose Assembly must not exceed the lower of the respective Working Pressure rated values.

EXAMPLE 1.

T28D Hose Assembly with **T2040S-0812** coupling one end and **T2090S-0808** coupling other end.

Maximum Working Pressure of **T28D** is 350 bar.

Maximum Working Pressure of **T2040S-0812** is 690 bar.

Maximum Working Pressure of **T2090S-0808** is 690 bar.

The Maximum Working Pressure of the Hose Assembly is therefore 350 bar, the lowest of the respective Maximum Working Pressure rated values (in this case, the hose).

EXAMPLE 2.

H5016D Hose Assembly with **T7130S-1620** coupling one end and **T7030S-1621** coupling other end.

Maximum Working Pressure of **H5016D** is 350 bar.

Maximum Working Pressure of **T7130S-1620** is 280 bar.

Maximum Working Pressure of **T7030S-1621** is 420 bar.

The Maximum Working Pressure of the Hose Assembly is therefore 280 bar, the lowest of the respective Maximum Working Pressure rated values (in this case, the **T7130S-1620**).

8000S SERIES COUPLINGS FOR PL1, PL1D, PL300 AND RQP6 SERIES HOSE

PL1, PL1D, PL300 and **RQP6** Series hose, and **8000S** Series Push-On Fittings, are recommended for use in systems with Static Working Pressures (constant loads without pressure spikes) only. They are not recommended for vibration or pressure surge applications.

PL1, PL1D, PL300 and **RQP6** Series hose should not be used at both maximum working pressure and maximum temperature simultaneously.

8000S Series Push-On pages 30.

Assembly Instructions page 43.

PL1, PL1D, PL300 and **RQP6** Series hose simply pushes on to **8000S** Series Couplings, and for Static Working Pressures up to 50% of Maximum Static Working Pressures a clamp is not required. For diesel fuel and other potentially dangerous or critical applications, and Static Working Pressures above 50% of maximum; a clamp around the hose is required. Do not overtighten clamp as this will damage hose. Factory crimped couplings are also available in some sizes. Contact RYCO for more information.

DROP LENGTH & CUT-OFF ALLOWANCE DIMENSIONS FOR COUPLINGS

In this Product Technical Manual, dimensional values for Drop Length (DL) and Cut-off Allowance (C_A) are published.

Due to different manufacturing methods and design changes, DL and C_A values may vary from time to time.

Before attaching couplings to the hose, measure and check that the DL and C_A dimensions of the actual coupling to be used complies with that published, or is suitable for the application.

COUPLINGS

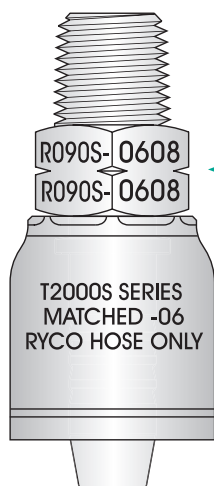
INFORMATION

RYCO BITELOK T2000S, T4000S, T7000S AND TT000S SERIES COUPLINGS

Branding of T2000S, T4000S, T7000S and TT000S Couplings shows a universal prefix "R".

T2000S has two identification grooves, T4000S has three grooves, T7000S has four grooves and TT000S has two grooves (one at the top and one at the bottom of the ferrule) branded on the ferrule (body) of the Couplings signifying their series designation.

T2000S EXAMPLE



Insert branding
R090S-0608

Ferrule branding
T2000S Series

Two Series Code
Grooves identify
T2000S Series

To complete the Part Number for Coupling:
Insert Part Branding is **R090S-0608**

Series is **T2000S** (from **T2000S** Ferrule Branding or
Two Series Code Grooves)

Simply replace "R" of Insert Part Branding with "T2"
(first two characters of Series): **T2090S-0608**

T4000S EXAMPLE



Insert branding
R090S-0608

Ferrule branding
T4000S Series

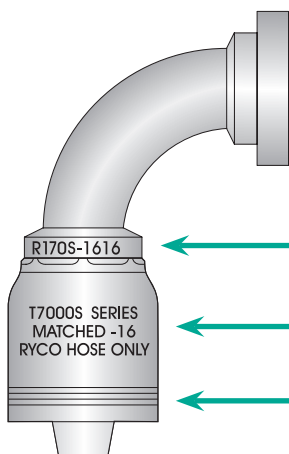
Three Series Code
Grooves identify
T4000S Series

To complete the Part Number for Coupling:
Insert Part Branding is **R090S-0608**

Series is **T4000S** (from **T4000S** Ferrule Branding or
Three Series Code Grooves)

Simply replace "R" of Insert Part Branding with "T4"
(first two characters of Series): **T4090S-0608**

T7000S EXAMPLE



Insert branding
R170S-1616

Ferrule branding
T7000S Series

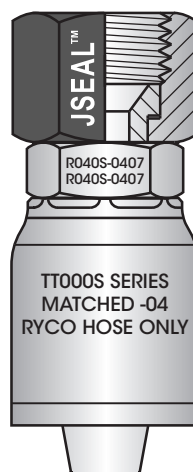
Four Series Code
Grooves identify
T7000S Series

To complete the Part Number for Coupling:
Insert Part Branding is **R170S-1616**

Series is **T7000S** (from **T7000S** Ferrule Branding or
Four Series Code Grooves)

Simply replace "R" of Insert Part Branding with "T7"
(first two characters of Series): **T7170S-1616**

TT000S EXAMPLE



Insert branding
R040S-0407

Ferrule branding
TT000S Series

Two Series Code
Groove (one at each
end) identifies
TT000S Series

To complete the Part Number for Coupling:
Insert Part Branding is **R040S-0407**

Series is **TT000S** (from Two Series Code Groove, one at
each end)

Simply replace "R" of Insert Part Branding with "TT"
(first two characters of Series): **TT040S-0407**

T2000S (T200SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

HOSE COMPATIBILITY FOR T2000S SERIES

NON-SKIVE

For RYCO Hose Series T3000D, T3000S, T3600D, T3600S, T4000D, T4000S, T5000D, T5000S, T6000D, T6000S, T1D, T1F, T1S, T2D, T2S, T2C, TXA2D, RQP1, RQP2, TW1, PW2, E2, EC, BT1, JS4000, JS6000, TJ2D, CS1000, D2B and MS1000.

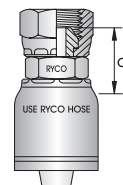
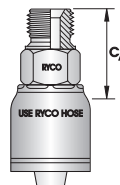
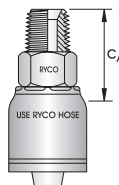
BSP

T2010S (T201SS)

T2013S (T201PSS)

T2020S (T202SS)

60° SEAT



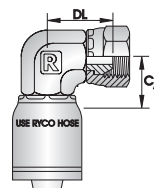
HOSE SIZE		THRD SIZE	DASH SIZE	BSPT MALE		BSPP MALE		BSPP FEMALE	
DN	inch	inch		PART NO	C _A	PART NO	C _A	PART NO	C _A
6	1/4	1/4	-0404	T2010S-0404	30	T2013S-0404	27	T2020S-0404	24
6	1/4	3/8	-0406					T2020S-0406	26
6	1/4	1/2	-0408					T2020S-0408	28
10	3/8	1/4	-0604	T2010S-0604	33			T2020S-0604	22
10	3/8	3/8	-0606	T2010S-0606	33	T2013S-0606	33	T2020S-0606	26
10	3/8	1/2	-0608	T2010S-0608	38			T2020S-0608	28
12	1/2	1/2	-0808	T2010S-0808	40	T2013S-0808	31	T2020S-0808	26
12	1/2	3/4	-0812					T2020S-0812	30
16	5/8	1/2	-1008	T2010S-1008	41				
16	5/8	5/8	-1010					T2020S-1010	26
19	3/4	3/4	-1212	T2010S-1212	41	T2013S-1212	40		
19	3/4	1	-1216					T2020S-1216	33
25	1	1	-1616	T2010S-1616	48	T2013S-1616	45	T2020S-1616	38
25	1	1.1/4	-1620					T2020S-1620	40
31	1.1/4	1.1/4	-2020	T2010S-2020	53			T2020S-2020	43

BSP

T2060S (T206SS)

T2050S (T205SS)

60° SEAT



HOSE SIZE		THRD SIZE	DASH SIZE	BSPP FEMALE 45° ELBOW			BSPP FEMALE 90° ELBOW		
DN	inch	inch		PART NO	C _A	DL	PART NO	C _A	DL
10	3/8	3/8	-0606				T2050S-0606	23	28
12	1/2	3/4	-0812				T2050S-0812	30	36
19	3/4	3/4	-1212	T2060S-1212	44	20	T2050S-1212	30	36

COUPLINGS

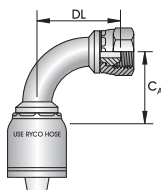
T2000S (T200SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

BSP

T2270S
(T227SS)

T2260S
(T226SS)

60° SEAT



HOSE SIZE			THRD SIZE	DASH SIZE	BSPP FEMALE 45° TUBE BEND			BSPP FEMALE 90° TUBE BEND		
DN	inch	inch			PART NO	C _A	DL	PART NO	C _A	DL
6	1/4	1/4	-0404		T2270S-0404	35	17	T2260S-0404	27	29
6	1/4	3/8	-0406		T2270S-0406	36	18	T2260S-0406	27	28
6	1/4	1/2	-0408		T2270S-0408					
10	3/8	3/8	-0606		T2270S-0606	43	18	T2260S-0606	35	34
10	3/8	1/2	-0608		T2270S-0608	45	19	T2260S-0608	34	33
12	1/2	3/8	-0806					T2260S-0806		
12	1/2	1/2	-0808		T2270S-0808	49	22	T2260S-0808	40	45
12	1/2	3/4	-0812		T2270S-0812			T2260S-0812		
16	5/8	3/4	-1012		T2270S-1012	58	28	T2260S-1012	58	52
19	3/4	3/4	-1212		T2270S-1212	70	29	T2260S-1212	55	58
25	1	1	-1616		T2270S-1616	85	41	T2260S-1616	67	72
31	1.1/4	1.1/4	-2020		T2270S-2020	105	46	T2260S-2020	90	91
38	1.1/2	1.1/2	-2424					T2260S-2424	104	105
51	2	2	-3232					T2260S-3232	137	132

NOTE: Hose Compatibility for the **T2000S** series can be found on page 9.

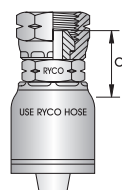
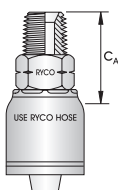
T2000S (T200SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

NPT

T2090S
(T209SS)

T2020NS
(T202NSS)

60° SEAT



HOSE SIZE		THRD SIZE	DASH SIZE	NPT MALE		NPSM FEMALE	
DN	inch	inch		PART NO	C _A	PART NO	C _A
6	1/4	1/8	-0402	T2090S-0402	25		
6	1/4	1/4	-0404	T2090S-0404	30	T2020NS-0404	24
6	1/4	3/8	-0406	T2090S-0406	30		
10	3/8	1/4	-0604	T2090S-0604	33		
10	3/8	3/8	-0606	T2090S-0606	33	T2020NS-0606	27
10	3/8	1/2	-0608	T2090S-0608	38		
12	1/2	3/8	-0806	T2090S-0806	35		
12	1/2	1/2	-0808	T2090S-0808	40	T2020NS-0808	29
12	1/2	3/4	-0812	T2090S-0812	37		
16	5/8	1/2	-1008	T2090S-1008	41		
16	5/8	3/4	-1012	T2090S-1012	41		
19	3/4	3/4	-1212	T2090S-1212	41	T2020NS-1212	28
19	3/4	1	-1216	T2090S-1216	43		
25	1	1	-1616	T2090S-1616	48	T2020NS-1616	33
25	1	1.1/4	-1620	T2090S-1620	46		
31	1.1/4	1	-2016	T2090S-2016	52		
31	1.1/4	1.1/4	-2020	T2090S-2020	53		
31	1.1/4	1.1/2	-2024	T2090S-2024	54		

NOTE: Hose Compatibility for the **T2000S** series can be found on page 9.

COUPLINGS

T2000S (T200SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

JSEAL™/JIC

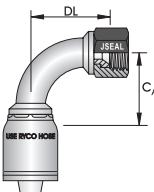
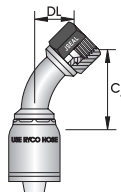
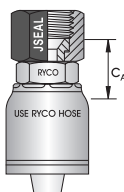
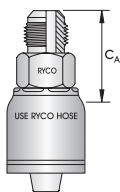
T2030S
(T203SS)

T2040S
(T204SS)

T2250S
(T225SS)

T2240S
(T224SS)

37° FLARE



HOSE SIZE	THRD SIZE	TUBE SIZE	DASH SIZE		JIC MALE		JSEAL™/JIC FEMALE		JSEAL™/JIC FEMALE 45° TUBE BEND			JSEAL™/JIC FEMALE 90° MEDIUM BEND		
DN	inch	inch	inch		PART NO	C _A	PART NO	C _A	PART NO	C _A	DL	PART NO	C _A	DL
6	1/4	7/16	1/4	-0407	T2030S-0407	29	T2040S-0407	19	T2250S-0407	31	10	T2240S-0407	26	32
6	1/4	1/2	5/16	-0408	T2030S-0408	27	T2040S-0408	22	T2250S-0408	40	12	T2240S-0408	26	32
6	1/4	9/16	3/8	-0409	T2030S-0409	30	T2040S-0409	22	T2250S-0409	40	12	T2240S-0409	26	38
10	3/8	9/16	3/8	-0609	T2030S-0609	32	T2040S-0609	22	T2250S-0609	39	11	T2240S-0609	35	38
10	3/8	3/4	1/2	-0612	T2030S-0612	35	T2040S-0612	24	T2250S-0612	42	15	T2240S-0612	35	41
10	3/8	7/8	5/8	-0614	T2030S-0614	37	T2040S-0614	27						
12	1/2	3/4	1/2	-0812	T2030S-0812	37	T2040S-0812	25	T2250S-0812	45	15	T2240S-0812	41	41
12	1/2	7/8	5/8	-0814	T2030S-0814	39	T2040S-0814	27	T2250S-0814	48	18	T2240S-0814	41	47
12	1/2	1.1/16	3/4	-0817	T2030S-0817	42	T2040S-0817	29	T2250S-0817	47	21	T2240S-0817	41	45
16	5/8	7/8	5/8	-1014	T2030S-1014	41	T2040S-1014	28	T2250S-1014	50	19	T2240S-1014	48	47
19	3/4	7/8	5/8	-1214			T2040S-1214	29				T2240S-1214	48	48
19	3/4	1.1/16	3/4	-1217	T2030S-1217	43	T2040S-1217	30	T2250S-1217	65	22	T2240S-1217	55	57
25	1	1.5/16	1	-1621	T2030S-1621	47	T2040S-1621	36	T2250S-1621	77	30	T2240S-1621	68	73
31	1.1/4	1.5/8	1.1/4	-2026	T2030S-2026	52	T2040S-2026	44	T2250S-2026	97	39	T2240S-2026	88	82

NOTE: Hose Compatibility for the **T2000S** series can be found on page 9.

T2000S (T200SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

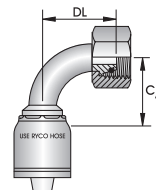
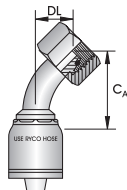
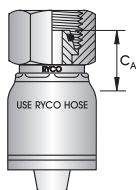
METRIC

T2501S (T250SS & T250RSS)

T2510S (T251SS)

T2520S (T252SS)

DKOL
METRIC O RING (LIGHT)
24° CONE

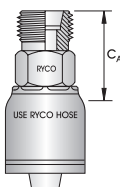


HOSE SIZE		THRD SIZE	TUBE SIZE	DASH SIZE	DKOL FEMALE 24° CONE		DKOL FEMALE 24° CONE 45° TUBE BEND			DKOL FEMALE 24° CONE 90° TUBE BEND		
DN	inch	mm	mm		PART NO	C _A	PART NO	C _A	DL	PART NO	C _A	DL
6	1/4	12x1,5	6	-0412	T2501S-0412	21	T2510S-0412	36	18	T2520S-0412	26	31
6	1/4	14x1,5	8	-0414	T2501S-0414	22	T2510S-0414	35	17	T2520S-0414	26	31
6	1/4	16x1,5	10	-0416	T2501S-0416	22	T2510S-0416	35	17			
10	3/8	16x1,5	10	-0616	T2501S-0616	23	T2510S-0616	45	20	T2520S-0616	36	35
10	3/8	18x1,5	12	-0618	T2501S-0618	23	T2510S-0618	45	20	T2520S-0618	36	35
12	1/2	22x1,5	15	-0822	T2501S-0822	26	T2510S-0822	51	22	T2520S-0822	40	44
12	1/2	26x1,5	18	-0826	T2501S-0826	29						
16	5/8	26x1,5	18	-1026	T2501S-1026	26	T2510S-1026	59	28	T2520S-1026	48	54
19	3/4	26x1,5	18	-1226	T2501S-1226	28						
19	3/4	30x2,0	22	-1230	T2501S-1230	27	T2510S-1230	73	31	T2520S-1230	56	65
25	1	36x2,0	28	-1636	T2501S-1636	33	T2510S-1636	91	46	T2520S-1636	69	79
31	1.1/4	45x2,0	35	-2045	T2501S-2045	40	T2510S-2045	101	40	T2520S-2045	88	72

METRIC

T2650S (T265SS)

DKL
METRIC (LIGHT)
24° CONE

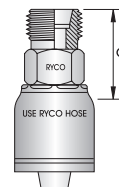


HOSE SIZE		THRD SIZE	TUBE SIZE	DASH SIZE	DKL MALE 24° CONE	
DN	inch	mm	mm		PART NO	C _A
6	1/4	12x1,5	6	-0412	T2650S-0412	25
6	1/4	14x1,5	8	-0414	T2650S-0414	25
6	1/4	16x1,5	10	-0416	T2650S-0416	26
10	3/8	16x1,5	10	-0616	T2650S-0616	29
10	3/8	18x1,5	12	-0618	T2650S-0618	29
10	3/8	22x1,5	15	-0622	T2650S-0622	24
12	1/2	22x1,5	15	-0822	T2650S-0822	32
12	1/2	26x1,5	18	-0826	T2650S-0826	32
16	5/8	26x1,5	18	-1026	T2650S-1026	29
19	3/4	30x2,0	22	-1230	T2650S-1230	31
25	1	36x2,0	28	-1636	T2650S-1636	37

METRIC

T2630S (T263SS)

DKS
METRIC (HEAVY)
24° CONE



HOSE SIZE		THRD SIZE	TUBE SIZE	DASH SIZE	DKS MALE 24° CONE	
DN	inch	mm	mm		PART NO	C _A
6	1/4	16x1,5	8	-0416	T2630S-0416	27
6	1/4	18x1,5	10	-0418	T2630S-0418	23
10	3/8	20x1,5	12	-0620	T2630S-0620	30
10	3/8	22x1,5	14	-0622	T2630S-0622	29
12	1/2	24x1,5	16	-0824	T2630S-0824	30
16	5/8	30x2,0	20	-1030	T2630S-1030	31
19	3/4	30x2,0	20	-1230	T2630S-1230	35
19	3/4	36x2,0	25	-1236	T2630S-1236	37
25	1	42x2,0	30	-1642	T2630S-1642	43
31	1.1/4	52x2,0	38	-2052	T2630S-2052	47

NOTE: Hose Compatibility for the **T2000S** series can be found on page 9.

COUPLINGS

T2000S (T200SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

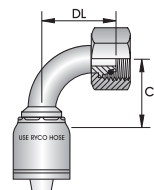
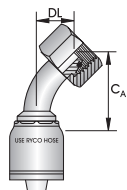
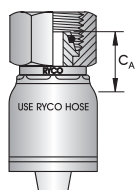
METRIC

T2711S
(T271SS)

T2720S
(T272SS)

T2730S
(T273SS)

DKOS
METRIC O RING (HEAVY)
24° CONE



HOSE SIZE		THRD SIZE	TUBE SIZE	DASH SIZE	DKOS FEMALE 24° CONE		DKOS FEMALE 24° CONE 45° TUBE BEND			DKOS FEMALE 24° CONE 90° TUBE BEND		
DN	inch	mm	mm		PART NO	C _A	PART NO	C _A	DL	PART NO	C _A	DL
6	1/4	14x1,5	6	-0414	T2711S-0414	19	T2720S-0414	35	16	T2730S-0414	27	28
6	1/4	16x1,5	8	-0416	T2711S-0416	22	T2720S-0416	36	17	T2730S-0416	27	31
6	1/4	18x1,5	10	-0418	T2711S-0418	22	T2720S-0418	36	17	T2730S-0418	27	30
10	3/8	20x1,5	12	-0620	T2711S-0620	24	T2720S-0620	45	20	T2730S-0620	36	36
10	3/8	22x1,5	14	-0622	T2711S-0622	26	T2720S-0622	46	20	T2730S-0622	36	36
12	1/2	24x1,5	16	-0824	T2711S-0824	28	T2720S-0824	53	24	T2730S-0824	40	48
16	5/8	30x2,0	20	-1030	T2711S-1030	31	T2720S-1030	63	31	T2730S-1030	45	58
16	5/8	36x2,0	25	-1036	T2711S-1036	31						
19	3/4	30x2,0	20	-1230	T2711S-1230	30	T2720S-1230	74	35	T2730S-1230	56	68
19	3/4	36x2,0	25	-1236	T2711S-1236	33	T2720S-1236	76	35	T2730S-1236	55	68
25	1	36x2,0	25	-1636			T2720S-1636			T2730S-1636		
25	1	42x2,0	30	-1642	T2711S-1642	36	T2720S-1642	87	36	T2730S-1642	69	77
31	1.1/4	52x2,0	38	-2052	T2711S-2052	40	T2720S-2052	128	48	T2730S-2052	90	89

NOTE: Hose Compatibility for the **T2000S** series can be found on page 9.

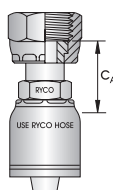
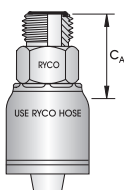
T2000S (T200SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

ORFS

T2840S
(T284SS)

T2800S
(T280SS)

O RING
FACE SEAL



HOSE SIZE		THRD SIZE	TUBE SIZE	DASH SIZE	ORFS MALE		ORFS FEMALE	
DN	inch	inch	inch		PART NO	C _A	PART NO	C _A
6	1/4	9/16	1/4	-0409	T2840S-0409	25	T2800S-0409	28
6	1/4	11/16	3/8	-0411	T2840S-0411	26	T2800S-0411	32
10	3/8	11/16	3/8	-0611	T2840S-0611	29	T2800S-0611	31
10	3/8	13/16	1/2	-0613	T2840S-0613	31	T2800S-0613	34
12	1/2	11/16	3/8	-0811			T2800S-0811	31
12	1/2	13/16	1/2	-0813	T2840S-0813	33	T2800S-0813	34
12	1/2	1	5/8	-0816	T2840S-0816	36	T2800S-0816	40
12	1/2	1.3/16	3/4	-0819			T2800S-0819	43
16	5/8	1	5/8	-1016	T2840S-1016	37	T2800S-1016	38
16	5/8	1.3/16	3/4	-1019	T2840S-1019	38	T2800S-1019	43
19	3/4	1	5/8	-1216			T2800S-1216	38
19	3/4	1.3/16	3/4	-1219	T2840S-1219	38	T2800S-1219	43
19	3/4	1.7/16	1	-1223			T2800S-1223	52
25	1	1.7/16	1	-1623	T2840S-1623	41	T2800S-1623	54
31	1.1/4	1.11/16	1.1/4	-2027	T2840S-2027	45	T2800S-2027	59

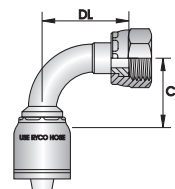
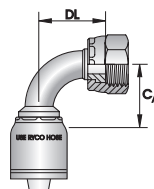
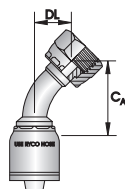
ORFS

T2810S
(T281SS)

T2823S
(T282SS)

T2820S
(T282SS)

O RING
FACE SEAL



HOSE SIZE		THRD SIZE	TUBE SIZE	DASH SIZE	ORFS FEMALE 45° TUBE BEND			ORFS FEMALE 90° SHORT BEND			ORFS FEMALE 90° MEDIUM BEND		
DN	inch	inch	inch		PART NO	C _A	DL	PART NO	C _A	DL	PART NO	C _A	DL
6	1/4	9/16	1/4	-0409	T2810S-0409	39	18	T2823S-0409	27	21	T2820S-0409	28	32
6	1/4	11/16	3/8	-0411	T2810S-0411	39	18	T2823S-0411	26	26	T2820S-0411	28	38
10	3/8	11/16	3/8	-0611	T2810S-0611	45	20	T2823S-0611	32	24	T2820S-0611	34	38
10	3/8	13/16	1/2	-0613	T2810S-0613	40	17	T2823S-0613	35	29	T2820S-0613	34	41
12	1/2	13/16	1/2	-0813	T2810S-0813	49	19	T2823S-0813	43	30	T2820S-0813	41	41
12	1/2	1	5/8	-0816	T2810S-0816	46	19	T2823S-0816	42	35	T2820S-0816	43	47
16	5/8	1	5/8	-1016	T2810S-1016	59	20	T2823S-1016	40	32	T2820S-1016	47	47
16	5/8	1.3/16	3/4	-1019	T2810S-1019	58	24	T2823S-1019	40	48	T2820S-1019	46	58
19	3/4	1.3/16	3/4	-1219	T2810S-1219	64	29	T2823S-1219	56	49	T2820S-1219	54	59
19	3/4	1.7/16	1	-1223	T2810S-1223	60	26	T2823S-1223	55	56	T2820S-1223	54	71
25	1	1.7/16	1	-1623	T2810S-1623	86	34	T2823S-1623	64	56	T2820S-1623	67	71
31	1.1/4	1.11/16	1.1/4	-2027	T2810S-2027	125	45	T2823S-2027	71	74	T2820S-2027	84	90

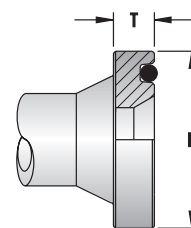
NOTE: Hose Compatibility for the **T2000S** series can be found on page 9.

COUPLINGS

T2000S (T200SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

DIMENSIONS FOR SAE CODE 61 AND CODE 62 FLANGES, AND RYCO CODE 62C FLANGES

NOMINAL FLANGE	CODE 61				CODE 62				CODE 62C			
	B		T		B		T		B		T	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
1/2	30,2	1.19	6,73	0.265	31,8	1.25	7,75	0.305				
*5/8	34,0	1.34	6,73	0.265								
3/4	38,1	1.50	6,73	0.265	41,3	1.63	8,76	0.345	41,3	1.63	14,20	0.559
1	44,5	1.75	8,00	0.315	47,6	1.88	9,53	0.375	47,6	1.88	14,20	0.559
1.1/4	50,8	2.00	8,00	0.315	54,0	2.12	10,29	0.405	54,0	2.12	14,20	0.559
1.1/2	60,3	2.38	8,00	0.315	63,5	2.50	12,57	0.495	63,5	2.50	14,20	0.559
2	71,4	2.81	9,53	0.375	79,4	3.13	12,57	0.495	79,4	3.13	14,20	0.559
2.1/2	84,1	3.31	9,53	0.375								
3	101,6	4.00	9,53	0.375								



NOTE: *5/8 is used by Komatsu.

RYCO Code 62C fittings conform to the flange OD and bolt hole patterns of SAE Code 62 but require special flange clamps.

RYCO Code 62C flange heads are thicker than SAE Code 62 and measure T = 14,2 mm (0.559 inch) in all sizes.

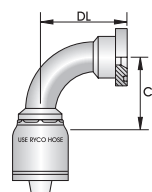
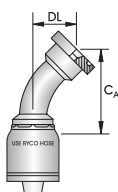
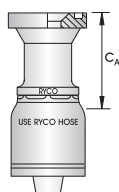
SAE FLANGE

T2130S
(T213SS)

T2150S
(T215SS)

T2170S
(T217SS)

RYCO
CODE 61
***[5/8 KOMATSU]**
O RING NOT SUPPLIED



HOSE SIZE		NOM. FLANGE SIZE	DASH SIZE	CODE 61 FLANGE		CODE 61 FLANGE 45° TUBE BEND			CODE 61 FLANGE 90° TUBE BEND		
DN	inch	inch		PART NO	CA	PART NO	CA	DL	PART NO	CA	DL
19	3/4	3/4	-1212	T2130S-1212	46	T2150S-1212	65	26	T2170S-1212	55	54
19	3/4	1	-1216	T2130S-1216	50	T2150S-1216	69	30	T2170S-1216	55	60
25	1	1	-1616	T2130S-1616	52	T2150S-1616	81	30	T2170S-1616	68	68
25	1	1.1/4	-1620	T2130S-1620	57	T2150S-1620	83	32	T2170S-1620	70	69
31	1.1/4	1	-2016						T2170S-2016	78	68
31	1.1/4	1.1/4	-2020	T2130S-2020	59	T2150S-2020	100	36	T2170S-2020	88	78
31	1.1/4	1.1/2	-2024	T2130S-2024	85	T2150S-2024	102	38	T2170S-2024	88	81
38	1.1/2	1.1/2	-2424						T2170S-2424	104	93
38	1.1/2	2	-2432						T2170S-2432	104	95
51	2	2	-3232						T2170S-3232	137	130

NOTE: Hose Compatibility for the **T2000S** series can be found on page 9.

T2000S (T200SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

STANDPIPE

T2640S
(T264SS)

METRIC



HOSE SIZE		TUBE SIZE	DASH SIZE	METRIC STANDPIPE	
DN	inch	mm		PART NO	C _A
6	1/4	6	-0406	T2640S-0406	31
6	1/4	8	-0408	T2640S-0408	31
6	1/4	10	-0410	T2640S-0410	32
6	1/4	12	-0412	T2640S-0412	32
10	3/8	12	-0612	T2640S-0612	32
10	3/8	14	-0614	T2640S-0614	38
12	1/2	15	-0815	T2640S-0815	39
12	1/2	16	-0816	T2640S-0816	39
16	5/8	18	-1018	T2640S-1018	35
16	5/8	20	-1020	T2640S-1020	45
19	3/4	20	-1220	T2640S-1220	45
19	3/4	22	-1222	T2640S-1222	37
19	3/4	25	-1225	T2640S-1225	45

NOTE: Hose Compatibility for the **T2000S** series can be found on page 9.

COUPLINGS

T4000S (T400SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

HOSE COMPATIBILITY FOR T4000S SERIES

NON-SKIVE

For RYCO Hose Series M2 sizes -04 to -12.
For RYCO Hose Series M2G sizes -04 to -12.
For RYCO Hose Series RQP5, T5 sizes -04 to -20.
For RYCO Hose Series MP1 sizes -04 to -20.

NON-SKIVE

For RYCO Hose Series PL1, PL1D, PL300, RQP6, SR, SRF, SRX sizes -12 to -48.

BSP

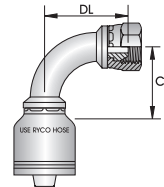
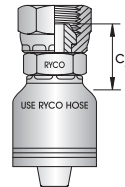
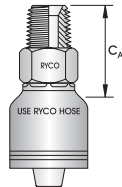
T4010S (T401SS)

T4013S (T401PSS)

T4020S (T402SS)

T4260S (T426SS)

60° SEAT



HOSE SIZE		THRD SIZE	DASH SIZE	BSPT MALE		BSPP MALE		BSPP FEMALE		BSPP FEMALE 90° TUBE BEND		
DN	inch	inch		PART NO	C _A	PART NO	C _A	PART NO	C _A	PART NO	C _A	DL
6	1/4	1/4	-0404	T4010S-0404	30	T4013S-0404	27	T4020S-0404	24	T4260S-0404	27	29
10	3/8	1/4	-0604	T4010S-0604	30			T4020S-0604	22			
10	3/8	3/8	-0606	T4010S-0606	33	T4013S-0606	33	T4020S-0606	24	T4260S-0606	35	33
10	3/8	1/2	-0608	T4010S-0608	37			T4020S-0608	27	T4260S-0608	34	33
12	1/2	1/2	-0808	T4010S-0808	40	T4013S-0808	31	T4020S-0808	26	T4260S-0808	40	45
12	1/2	3/4	-0812					T4020S-0812	30			
16	5/8	5/8	-1010					T4020S-1010	26	T4260S-1010	49	50
19	3/4	3/4	-1212	T4010S-1212	41	T4013S-1212	40			T4260S-1212	55	58
25	1	1	-1616	T4010S-1616	48	T4013S-1616	45	T4020S-1616	33	T4260S-1616	67	77
31	1.1/4	1.1/4	-2020	T4010S-2020	53			T4020S-2020	43			

T4000S (T400SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

INTRODUCTION

COUPLINGS

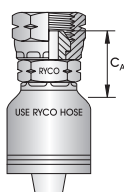
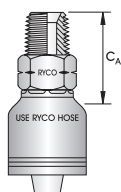
TECHNICAL

NPT

T4090S (T409SS)

T4020NS (T402NSS)

60° SEAT



HOSE SIZE		THRD SIZE	DASH SIZE	NPT MALE		NPSM FEMALE	
DN	inch	inch		PART NO	C _A	PART NO	C _A
6	1/4	1/8	-0402	T4090S-0402	25		
6	1/4	1/4	-0404	T4090S-0404	30	T4020NS-0404	24
10	3/8	1/4	-0604	T4090S-0604	33		
10	3/8	3/8	-0606	T4090S-0606	33	T4020NS-0606	27
10	3/8	1/2	-0608	T4090S-0608	38		
12	1/2	3/8	-0806	T4090S-0806	35		
12	1/2	1/2	-0808	T4090S-0808	40	T4020NS-0808	25
12	1/2	3/4	-0812	T4090S-0812	37		
16	5/8	3/4	-1012	T4090S-1012	41		
19	3/4	3/4	-1212	T4090S-1212	41		
25	1	1	-1616	T4090S-1616	48		
31	1.1/4	1	-2016	T4090S-2016	52		
31	1.1/4	1.1/4	-2020	T4090S-2020	53		

JSEAL™/JIC

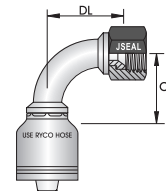
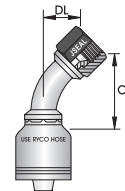
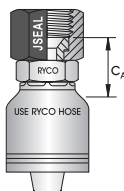
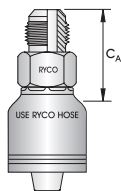
T4030S (T403SS)

T4040S (T404SS)

T4250S (T425SS)

T4240S (T424SS)

37° FLARE



HOSE SIZE		THRD SIZE	TUBE SIZE	DASH SIZE	JIC MALE		JSEAL™/JIC FEMALE		JSEAL™/JIC FEMALE 45° TUBE BEND			JSEAL™/JIC FEMALE 90° MEDIUM BEND		
DN	inch	inch	inch		PART NO	C _A	PART NO	C _A	PART NO	C _A	DL	PART NO	C _A	DL
6	1/4	7/16	1/4	-0407	T4030S-0407	29	T4040S-0407	22	T4250S-0407	31	10	T4240S-0407	26	32
6	1/4	1/2	5/16	-0408	T4030S-0408	29	T4040S-0408	22	T4250S-0408	40	12	T4240S-0408	26	32
6	1/4	9/16	3/8	-0409	T4030S-0409	30	T4040S-0409	22	T4250S-0409	40	12	T4240S-0409	26	38
10	3/8	9/16	3/8	-0609	T4030S-0609	32	T4040S-0609	22				T4240S-0609	35	38
10	3/8	3/4	1/2	-0612	T4030S-0612	35	T4040S-0612	24				T4240S-0612	35	41
12	1/2	3/4	1/2	-0812	T4030S-0812	37	T4040S-0812	25				T4240S-0812	41	38
12	1/2	7/8	5/8	-0814	T4030S-0814	39	T4040S-0814	27				T4240S-0814	41	47
16	5/8	7/8	5/8	-1014	T4030S-1014	33	T4040S-1014	27						
19	3/4	7/8	5/8	-1214			T4040S-1214	28						
19	3/4	1.1/16	3/4	-1217	T4030S-1217	43	T4040S-1217	29	T4250S-1217	65	22	T4240S-1217	55	57
25	1	1.5/16	1	-1621			T4040S-1621	36	T4250S-1621	77	30	T4240S-1621	68	73
31	1.1/4	1.5/8	1.1/4	-2026			T4040S-2026	44	T4250S-2026	121	50	T4240S-2026	88	81

NOTE: Hose Compatibility for the **T4000S** series can be found on page 18.

COUPLINGS

T4000S (T400SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

ORFS

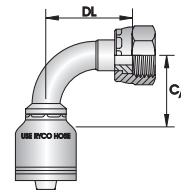
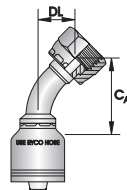
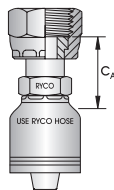
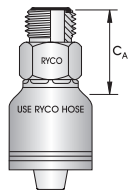
T4840S
(T484SS)

T4800S
(T480SS)

T4810S
(T481SS)

T4820S
(T482SS)

O RING
FACE SEAL



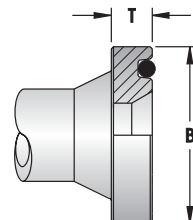
HOSE SIZE		THRD SIZE	TUBE SIZE	DASH SIZE	ORFS MALE		ORFS FEMALE		ORFS FEMALE 45° TUBE BEND			ORFS FEMALE 90° MEDIUM BEND		
DN	inch	inch	inch		PART NO	C _A	PART NO	C _A	PART NO	C _A	DL	PART NO	C _A	DL
6	1/4	9/16	1/4	-0409	T4840S-0409	25	T4800S-0409	28	T4810S-0409	39	18	T4820S-0409	26	32
6	1/4	11/16	3/8	-0411	T4840S-0411	26	T4800S-0411	32				T4820S-0411	28	38
10	3/8	11/16	3/8	-0611	T4840S-0611	29	T4800S-0611	33	T4810S-0611	45	20	T4820S-0611	34	38
10	3/8	13/16	1/2	-0613	T4840S-0613	31	T4800S-0613	34	T4810S-0613	40	17	T4820S-0613	34	29
12	1/2	13/16	1/2	-0813	T4840S-0813	33	T4800S-0813	34	T4810S-0813	49	19	T4820S-0813	41	41
16	5/8	1	5/8	-1016	T4840S-1016	37			T4810S-1016	59	20			
19	3/4	1.3/16	3/4	-1219	T4840S-1219	38	T4800S-1219	43	T4810S-1219	64	29	T4820S-1219	54	59
19	3/4	1.7/16	1	-1223			T4800S-1223	52						
25	1	1.7/16	1	-1623	T4840S-1623	41	T4800S-1623	54	T4810S-1623	86	34	T4820S-1623	67	71
31	1.1/4	1.11/16	1.1/4	-2027	T4840S-2027	46	T4800S-2027	59	T4810S-2027	107	45	T4820S-2027	87	90

NOTE: Hose Compatibility for the **T4000S** series can be found on page 18.

T4000S (T400SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

DIMENSIONS FOR SAE CODE 61 AND CODE 62 FLANGES, AND RYCO CODE 62C FLANGES

NOMINAL FLANGE	CODE 61				CODE 62				CODE 62C			
	B		T		B		T		B		T	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
1/2	30,2	1.19	6,73	0.265	31,8	1.25	7,75	0.305				
*5/8	34,0	1.34	6,73	0.265								
3/4	38,1	1.50	6,73	0.265	41,3	1.63	8,76	0.345	41,3	1.63	14,20	0.559
1	44,5	1.75	8,00	0.315	47,6	1.88	9,53	0.375	47,6	1.88	14,20	0.559
1.1/4	50,8	2.00	8,00	0.315	54,0	2.12	10,29	0.405	54,0	2.12	14,20	0.559
1.1/2	60,3	2.38	8,00	0.315	63,5	2.50	12,57	0.495	63,5	2.50	14,20	0.559
2	71,4	2.81	9,53	0.375	79,4	3.13	12,57	0.495	79,4	3.13	14,20	0.559
2.1/2	84,1	3.31	9,53	0.375								
3	101,6	4.00	9,53	0.375								



NOTE: *5/8 is used by Komatsu.

RYCO Code 62C fittings conform to the flange OD and bolt hole patterns of SAE Code 62 but require special flange clamps.

RYCO Code 62C flange heads are thicker than SAE Code 62 and measure T = 14,2 mm (0.559 inch) in all sizes.

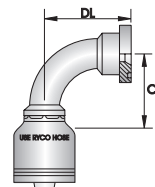
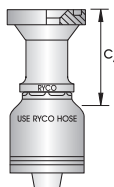
SAE FLANGE

T4130S
(T413SS)

T4150S
(T415SS)

T4170S
(T417SS)

RYCO
CODE 61
O RING NOT SUPPLIED



HOSE SIZE		NOM. FLANGE SIZE	DASH SIZE	CODE 61 FLANGE		CODE 61 FLANGE 45° TUBE BEND			CODE 61 FLANGE 90° TUBE BEND		
DN	inch	inch		PART NO	C _A	PART NO	C _A	DL	PART NO	C _A	DL
19	3/4	3/4	-1212	T4130S-1212	46	T4150S-1212	65	26	T4170S-1212	55	54
19	3/4	1	-1216	T4130S-1216	50						
25	1	1	-1616	T4130S-1616	52	T4150S-1616	81	30	T4170S-1616	68	68
25	1	1.1/4	-1620	T4130S-1620	57						
31	1.1/4	1.1/4	-2020	T4130S-2020	59	T4150S-2020	100	36	T4170S-2020	88	78
31	1.1/4	1.1/2	-2024	T4130S-2024	85						
38	1.1/2	1.1/2	-2424						T4170S-2424	104	93
51	2	2	-3232						T4170S-3232	140	130

NOTE: Hose Compatibility for the **T4000S** series can be found on page 18.

COUPLINGS

T7000S (T700SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

HOSE COMPATIBILITY FOR T7000S SERIES

NON-SKIVE

For RYCO Hose Series H3000, H4000, H5000 (sizes -06 to -24) and H6000 (sizes -06 to -20).

For RYCO Hose Series H12D, H12S all sizes.

For RYCO Hose Series E2, T2D, T2S, T2C, TXA2D, RQP2, sizes -06 to -32.

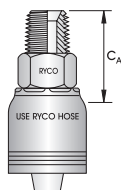
For RYCO Hose Series D2B, R4SPD and R4SHD.

BSP

T7010S (T701SS)

T7013S (T701PSS)

60° SEAT



HOSE SIZE		THRD SIZE	DASH SIZE	BSPT MALE		BSPP MALE	
DN	inch	inch		PART NO	C _A	PART NO	C _A
10	3/8	3/8	-0606	T7010S-0606	33	T7013S-0606	33
12	1/2	1/2	-0808	T7010S-0808	40	T7013S-0808	31
19	3/4	3/4	-1212	T7010S-1212	41	T7013S-1212	40
25	1	1	-1616	T7010S-1616	48	T7013S-1616	45
31	1.1/4	1.1/4	-2020	T7010S-2020	53		
38	1.1/2	1.1/2	-2424	T7010S-2424	55		
51	2	2	-3232	T7010S-3232	66		

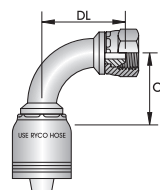
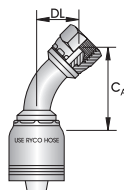
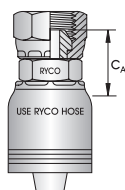
BSP

T7020S (T702SS)

T7270S (T727SS)

T7260S (T726SS)

60° SEAT



HOSE SIZE		THRD SIZE	DASH SIZE	BSPP FEMALE		BSPP FEMALE 45° TUBE BEND			BSPP FEMALE 90° TUBE BEND		
DN	inch	inch		PART NO	C _A	PART NO	C _A	DL	PART NO	C _A	DL
10	3/8	3/8	-0606	T7020S-0606	24	T7270S-0606	43	18	T7260S-0606	35	33
12	1/2	1/2	-0808	T7020S-0808	26	T7270S-0808	49	22	T7260S-0808	40	45
16	5/8	5/8	-1010	T7020S-1010	29						
19	3/4	3/4	-1212	T7020S-1212	28	T7270S-1212	70	29	T7260S-1212	55	58
19	3/4	1	-1216	T7020S-1216	39						
25	1	1	-1616	T7020S-1616	33	T7270S-1616	82	42	T7260S-1616	67	72
25	1	1.1/4	-1620	T7020S-1620	43						
31	1.1/4	1.1/4	-2020	T7020S-2020	40	T7270S-2020	103	44	T7260S-2020	87	88
38	1.1/2	1.1/2	-2424	T7020S-2424	45	T7270S-2424	118	52	T7260S-2424	103	106
51	2	2	-3232	T7020S-3232	54	T7270S-3232	142	65	T7260S-3232	130	132

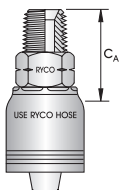
NOTE: T7000S BSPP, JIC, JIS and Metric Swivel Nut Couplings are shown as "Crimp Nut".
Larger sizes are "Wire Nut" or "Slip Nut".

T7000S (T700SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

NPT

T7090S (T709SS)

60° SEAT



HOSE SIZE		THRD SIZE	DASH SIZE	NPT MALE	
DN	inch	inch		PART NO	CA
10	3/8	1/4	-0604	T7090S-0604	33
10	3/8	3/8	-0606	T7090S-0606	33
12	1/2	3/8	-0806	T7090S-0806	35
12	1/2	1/2	-0808	T7090S-0808	40
19	3/4	3/4	-1212	T7090S-1212	41
25	1	1	-1616	T7090S-1616	48
31	1.1/4	1	-2016	T7090S-2016	52
31	1.1/4	1.1/4	-2020	T7090S-2020	53
38	1.1/2	1.1/2	-2424	T7090S-2424	55
51	2	2	-3232	T7090S-3232	66

INTRODUCTION

COUPLINGS

TECHNICAL

JSEAL™/JIC

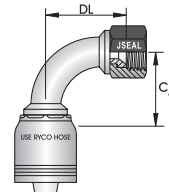
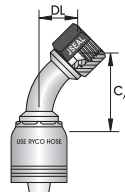
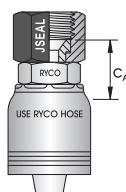
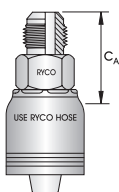
T7030S (T703SS)

T7040S (T704SS)

T7250S (T725SS)

T7240S (T724SS)

37° FLARE



HOSE SIZE		THRD SIZE	TUBE SIZE	DASH SIZE	JIC MALE		JSEAL™/JIC FEMALE		JSEAL™/JIC FEMALE 45° TUBE BEND			JSEAL™/JIC FEMALE 90° MEDIUM BEND		
DN	inch	inch	inch		PART NO	CA	PART NO	CA	PART NO	CA	DL	PART NO	CA	DL
10	3/8	9/16	3/8	-0609	T7030S-0609	32	T7040S-0609	22	T7250S-0609	39	11	T7240S-0609	35	38
10	3/8	3/4	1/2	-0612			T7040S-0612	24				T7240S-0612	35	40
12	1/2	3/4	1/2	-0812	T7030S-0812	37	T7040S-0812	25	T7250S-0812	45	15	T7240S-0812	41	41
12	1/2	7/8	5/8	-0814	T7030S-0814	39	T7040S-0814	27	T7250S-0814	48	18	T7240S-0814	41	47
16	5/8	7/8	5/8	-1014	T7030S-1014	41	T7040S-1014	28	T7250S-1014	50	19	T7240S-1014	48	47
19	3/4	7/8	5/8	-1214			T7040S-1214	30						
19	3/4	1.1/16	3/4	-1217	T7030S-1217	45	T7040S-1217	30	T7250S-1217	65	22	T7240S-1217	55	57
25	1	1.5/16	1	-1621	T7030S-1621	47	T7040S-1621	36	T7250S-1621	77	30	T7240S-1621	68	73
31	1.1/4	1.5/8	1.1/4	-2026	T7030S-2026	52	T7040S-2026	44	T7250S-2026	97	39	T7240S-2026	88	81
31	1.1/4	1.7/8	1.1/2	-2030			T7040S-2030	48						
38	1.1/2	1.7/8	1.1/2	-2430	T7030S-2430	57	T7040S-2430	49	T7250S-2430	121	50	T7240S-2430	103	106
51	2	2.1/2	2	-3240	T7030S-3240	74	T7040S-3240	60	T7250S-3240	152	63	T7240S-3240	137	132

NOTE: Hose Compatibility for the **T7000S** series can be found on page 22.

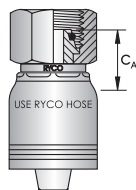
COUPLINGS

T7000S (T700SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

METRIC

T7501S (T750SS & T750RSS)

DKOL
METRIC O RING (LIGHT)
24° CONE



HOSE SIZE	THRD SIZE	TUBE SIZE	DASH SIZE	DKOL FEMALE 24° CONE
DN	inch	mm	mm	PART NO
31	1.1/4	45x2,0	35	-2045
38	1.1/2	52x2,0	42	-2452

METRIC

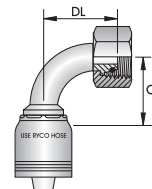
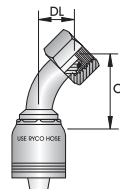
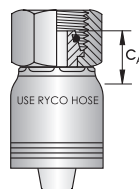
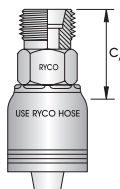
T7630S (T763SS)

T7711S (T771SS)

T7720S (T772SS)

T7730S (T773SS)

DKS
METRIC HEAVY
&
DKOS
METRIC O RING (HEAVY)
24° CONE



HOSE SIZE		THRD SIZE	TUBE SIZE	DASH SIZE	DKS MALE 24° CONE		DKOS FEMALE 24° CONE		DKOS FEMALE 24° CONE 45° TUBE BEND			DKOS FEMALE 24° CONE 90° TUBE BEND		
DN	inch	mm	mm		PART NO	C _A	PART NO	C _A	PART NO	C _A	DL	PART NO	C _A	DL
10	3/8	20x1,5	12	-0620			T7711S-0620	24						
10	3/8	22x1,5	14	-0622			T7711S-0622	26						
12	1/2	24x1,5	16	-0824	T7630S-0824	30	T7711S-0824	28	T7720S-0824	53	24	T7730S-0824	40	48
16	5/8	30x2,0	20	-1030			T7711S-1030	31						
16	5/8	36x2,0	25	-1036			T7711S-1036	33						
19	3/4	30x2,0	20	-1230	T7630S-1230	35	T7711S-1230	30	T7720S-1230	74	35	T7730S-1230	55	68
19	3/4	36x2,0	25	-1236	T7630S-1236	37	T7711S-1236	33	T7720S-1236	76	35	T7730S-1236	56	68
25	1	36x2,0	25	-1636	T7630S-1636	41	T7711S-1636	34				T7730S-1636		
25	1	42x2,0	30	-1642	T7630S-1642	43	T7711S-1642	36	T7720S-1642	87	36	T7730S-1642	69	77
31	1.1/4	42x2,0	30	-2042			T7711S-2042	38						
31	1.1/4	52x2,0	38	-2052			T7711S-2052	40	T7720S-2052	128	48	T7730S-2052	90	89
38	1.1/2	52x2,0	38	-2452			T7711S-2452	41						

NOTE: Hose Compatibility for the **T7000S** series can be found on page 22.

T7000S (T700SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

INTRODUCTION

COUPLINGS

TECHNICAL

ORFS

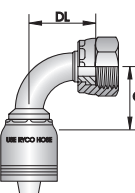
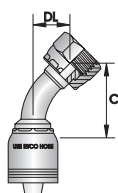
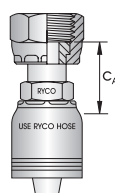
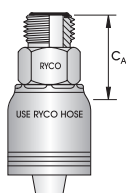
T7840S
(T784SS)

T7800S
(T780SS)

T7810S
(T781SS)

T7823S
(T782SSS)

O RING
FACE SEAL

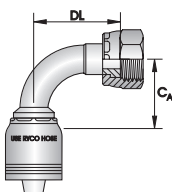


HOSE SIZE		THRD SIZE	TUBE SIZE	DASH SIZE	ORFS MALE		ORFS FEMALE		ORFS FEMALE 45° TUBE BEND			ORFS FEMALE 90° SHORT BEND		
DN	inch	inch	inch		PART NO	C _A	PART NO	C _A	PART NO	C _A	DL	PART NO	C _A	DL
10	3/8	11/16	3/8	-0611	T7840S-0611	29	T7800S-0611	31	T7810S-0611	45	20			
10	3/8	13/16	1/2	-0613					T7810S-0613	40	17			
12	1/2	13/16	1/2	-0813	T7840S-0813	33	T7800S-0813	34	T7810S-0813	49	19			
12	1/2	1	5/8	-0816			T7800S-0816	40	T7810S-0816	46	19			
12	1/2	1.3/16	3/4	-0819			T7800S-0819	43						
16	5/8	1	5/8	-1016			T7800S-1016	38	T7810S-1016	59	20			
19	3/4	1.3/16	3/4	-1219	T7840S-1219	38	T7800S-1219	43	T7810S-1219	64	29	T7823S-1219	56	49
19	3/4	1.7/16	1	-1223			T7800S-1223	52						
25	1	1.7/16	1	-1623	T7840S-1623	41	T7800S-1623	54	T7810S-1623	86	34	T7823S-1623	64	56
31	1.1/4	1.11/16	1.1/4	-2027	T7840S-2027	45	T7800S-2027	59	T7810S-2027	107	45	T7823S-2027		
38	1.1/2	2	1.1/2	-2432			T7800S-2432	66	T7810S-2432	126	53			

ORFS

T7820S
(T782SS)

O RING
FACE SEAL



HOSE SIZE		THRD SIZE	TUBE SIZE	DASH SIZE	ORFS FEMALE 90° MEDIUM BEND		
DN	inch	inch	inch		PART NO	C _A	DL
10	3/8	11/16	3/8	-0611	T7820S-0611	32	38
12	1/2	13/16	1/2	-0813	T7820S-0813	32	41
12	1/2	1	5/8	-0816	T7820S-0816	41	47
16	5/8	1	5/8	-1016	T7820S-1016	50	47
19	3/4	1.3/16	3/4	-1219	T7820S-1219	51	59
25	1	1.7/16	1	-1623	T7820S-1623	67	71
31	1.1/4	1.11/16	1.1/4	-2027	T7820S-2027	84	90
38	1.1/2	2	1.1/2	-2432	T7820S-2432	105	107

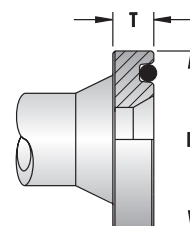
NOTE: Hose Compatibility for the **T7000S** series can be found on page 22.

COUPLINGS

T7000S (T700SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

DIMENSIONS FOR SAE CODE 61 AND CODE 62 FLANGES, AND RYCO CODE 62C FLANGES

NOMINAL FLANGE	CODE 61				CODE 62				CODE 62C			
	B		T		B		T		B		T	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
1/2	30,2	1.19	6,73	0.265	31,8	1.25	7,75	0.305				
*5/8	34,0	1.34	6,73	0.265								
3/4	38,1	1.50	6,73	0.265	41,3	1.63	8,76	0.345	41,3	1.63	14,20	0.559
1	44,5	1.75	8,00	0.315	47,6	1.88	9,53	0.375	47,6	1.88	14,20	0.559
1.1/4	50,8	2.00	8,00	0.315	54,0	2.12	10,29	0.405	54,0	2.12	14,20	0.559
1.1/2	60,3	2.38	8,00	0.315	63,5	2.50	12,57	0.495	63,5	2.50	14,20	0.559
2	71,4	2.81	9,53	0.375	79,4	3.13	12,57	0.495	79,4	3.13	14,20	0.559
2.1/2	84,1	3.31	9,53	0.375								
3	101,6	4.00	9,53	0.375								



NOTE: *5/8 is used by Komatsu.

RYCO Code 62C fittings conform to the flange OD and bolt hole patterns of SAE Code 62 but require special flange clamps.
RYCO Code 62C flange heads are thicker than SAE Code 62 and measure T = 14,2 mm (0.559 inch) in all sizes.

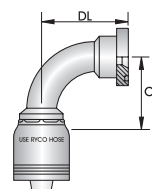
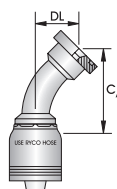
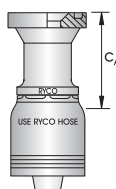
SAE FLANGE

T7130S
(T713SS)

T7150S
(T715SS)

T7170S
(T717SS)

RYCO
CODE 61
***(5/8 KOMATSU)**
O RING NOT SUPPLIED



HOSE SIZE		NOM. FLANGE SIZE	DASH SIZE	CODE 61 FLANGE		CODE 61 FLANGE 45° TUBE BEND			CODE 61 FLANGE 90° TUBE BEND		
DN	inch	inch		PART NO	C _A	PART NO	C _A	DL	PART NO	C _A	DL
19	3/4	3/4	-1212	T7130S-1212	46	T7150S-1212	65	26	T7170S-1212	55	54
19	3/4	1	-1216	T7130S-1216	50	T7150S-1216	69	30	T7170S-1216	55	60
25	1	1	-1616	T7130S-1616	52	T7150S-1616	81	30	T7170S-1616	68	68
25	1	1.1/4	-1620	T7130S-1620	57	T7150S-1620	83	32	T7170S-1620	70	69
31	1.1/4	1	-2016						T7170S-2016	78	68
31	1.1/4	1.1/4	-2020	T7130S-2020	59	T7150S-2020	100	36	T7170S-2020	88	78
31	1.1/4	1.1/2	-2024	T7130S-2024	85	T7150S-2024	103	38	T7170S-2024	88	81
38	1.1/2	1.1/2	-2424	T7130S-2424	85	T7150S-2424	115	42	T7170S-2424	104	93
38	1.1/2	2	-2432	T7130S-2432	95				T7170S-2432	104	99
51	2	2	-3232	T7130S-3232	101	T7150S-3232	150	58	T7170S-3232	137	130

NOTE: For SAE Code 61/62 and RYCO Code 62C Flange dimensions, see page 26.

NOTE: Hose Compatibility for the **T7000S** series can be found on page 22.

T7000S (T700SS) SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

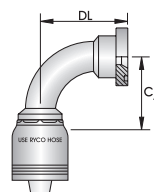
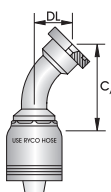
SAE FLANGE

T7330S
(T733SS)

T7350S
(T735SS)

T7370S
(T737SS)

RYCO
CODE 62
O RING NOT SUPPLIED



HOSE SIZE		NOM. FLANGE SIZE	DASH SIZE	CODE 62 FLANGE		CODE 62 FLANGE 45° TUBE BEND			CODE 62 FLANGE 90° TUBE BEND		
DN	inch	inch		PART NO	C _A	PART NO	C _A	DL	PART NO	C _A	DL
19	3/4	3/4	-1212	T7330S-1212	51	T7350S-1212	66	28	T7370S-1212	55	56
19	3/4	1	-1216	T7330S-1216	54	T7350S-1216	70	31	T7370S-1216	55	61
25	1	1	-1616	T7330S-1616	52	T7350S-1616	82	31	T7370S-1616	68	70
25	1	1.1/4	-1620	T7330S-1620	57	T7350S-1620	85	34	T7370S-1620	70	71
31	1.1/4	1	-2016						T7370S-2016	78	70
31	1.1/4	1.1/4	-2020	T7330S-2020	59	T7350S-2020	102	38	T7370S-2020	88	80
31	1.1/4	1.1/2	-2024	T7330S-2024	85	T7350S-2024	106	41	T7370S-2024	88	86
38	1.1/2	1.1/2	-2424	T7330S-2424	85	T7350S-2424	118	45	T7370S-2424	104	98
38	1.1/2	2	-2432	T7330S-2432	95				T7370S-2432	104	104
51	2	2	-3232	T7330S-3232	95	T7350S-3232	152	60	T7370S-3232	137	131

NOTE: For SAE Code 61/62 and RYCO Code 62C Flange dimensions, see page 26.

STANDPIPE

T7640S
(T764SS)

METRIC



HOSE SIZE		TUBE SIZE	DASH SIZE	METRIC STANDPIPE	
DN	inch	mm		PART NO	C _A
19	3/4	20	-1220	T7640S-1220	47

NOTE: Hose Compatibility for the **T7000S** series can be found on page 22.

COUPLINGS

TP000S SERIES BITELOK ONE-PIECE CRIMP COUPLINGS

HOSE COMPATIBILITY FOR TP000S SERIES

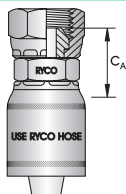
NON-SKIVE

For RYCO Hose Series TP7, TP7N, TP7T, TP7TN, TP8, TP8N, TP8T, TP8TN, TP3000 all sizes.

BSP

TP020S

60° SEAT

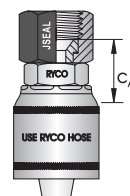


HOSE SIZE	THRD SIZE	DASH SIZE	BSPP FEMALE		
DN	inch	inch		PART NO	C _A
6	1/4	1/4	-0404	TP020S-0404	27
10	3/8	3/8	-0606	TP020S-0606	29
12	1/2	1/2	-0808	TP020S-0808	28
19	3/4	3/4	-1212	TP020S-1212	30
25	1	1	-1616	TP020S-1616	38

JSEAL™/JIC

TP040S

37° FLARE

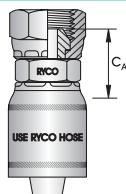


HOSE SIZE	THRD SIZE	TUBE SIZE	DASH SIZE	JSEAL™/JIC FEMALE		
DN	inch	inch	inch		PART NO	C _A
6	1/4	7/16	1/4	-0407	TP040S-0407	24
6	1/4	9/16	3/8	-0409	TP040S-0409	22
10	3/8	9/16	3/8	-0609	TP040S-0609	25
10	3/8	3/4	1/2	-0612	TP040S-0612	27
12	1/2	3/4	1/2	-0812	TP040S-0812	24
12	1/2	7/8	5/8	-0814	TP040S-0814	29
19	3/4	1.1/16	3/4	-1217	TP040S-1217	31
25	1	1.5/16	1	-1621	TP040S-1621	37

NPSM

TP020NS

60° SEAT

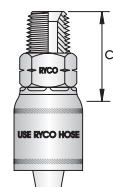


HOSE SIZE	THREAD		NPSM FEMALE		
DN	inch	inch	Dash Size	PART NO	C _A
6	1/4	1/4	-0404	TP020NS-0404	56

NPT

TP090S

60° SEAT



HOSE SIZE	THRD SIZE	DASH SIZE	NPT MALE		
DN	inch	inch		PART NO	C _A
6	1/4	1/4	-0404	TP090S-0404	33
10	3/8	3/8	-0606	TP090S-0606	35
12	1/2	1/2	-0808	TP090S-0808	41
19	3/4	3/4	-1212	TP090S-1212	43
25	1	1	-1616	TP090S-1616	49

TT000S ONE-PIECE CRIMP COUPLINGS

HOSE COMPATIBILITY FOR TT000S SERIES

For RYCO Hose Series RTH1.

INTRODUCTION

COUPLINGS

TECHNICAL

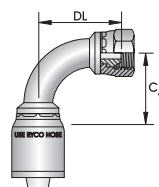
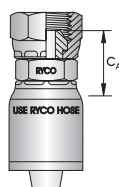
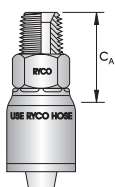
BSP

TT010S

TT020S

TT260S

60° SEAT



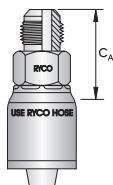
HOSE SIZE		THRD SIZE	DASH SIZE	BSPT MALE		BSPP FEMALE		BSPP FEMALE 90° BEND		
DN	inch	inch		PART NO	CA	PART NO	CA	PART NO	CA	DL
6	1/4	1/4	-0404	TT010S-0404	30	TT020S-0404	24	TT260S-0404	27	29
10	3/8	1/4	-0604	TT010S-0604	33					
10	3/8	3/8	-0606	TT010S-0606	33	TT020S-0606	27	TT260S-0606	35	33
10	3/8	1/2	-0608	TT010S-0608	38					
12	1/2	1/2	-0808	TT010S-0808	40	TT020S-0808	29	TT260S-0808	40	45
19	3/4	3/4	-1212	TT010S-1212	42	TT020S-1212	27	TT260S-1212	55	58
25	1	1	-1616	TT010S-1616	49	TT020S-1616	37	TT260S-1616	62	62

NOTE: This "Live Swivel" TT320S Series Insert is for Maximum Working Pressure: 350 bar (5100 psi): -08 Thread Size. Its swivel capability is to allow easy installation and orientation and avoid twisting of hose. It is not designed for continuous rotation or continuous movement.

JSEAL™/JIC

TT030S

37° FLARE

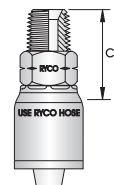


HOSE SIZE		THRD SIZE	DASH SIZE	JIC MALE	
DN	inch	inch		PART NO	CA
6	1/4	7/16	-0407	TT030S-0407	29
6	1/4	9/16	-0409	TT030S-0409	30
10	3/8	9/16	-0609	TT030S-0609	32
10	3/8	3/4	-0612	TT030S-0612	35
12	1/2	3/4	-0812	TT030S-0812	37
12	1/2	7/8	-0814	TT030S-0814	39

NPT

TT090S

60° SEAT



HOSE SIZE		THRD SIZE	DASH SIZE	NPT MALE	
DN	inch	inch		PART NO	CA
6	1/4	1/4	-0404	TT090S-0404	30
10	3/8	3/8	-0606	TT090S-0606	33
12	1/2	1/2	-0808	TT090S-0808	40
19	3/4	3/4	-1212	TT090S-1212	42
25	1	1	-1616	TT090S-1616	48

COUPLINGS

8000S (800SS) SERIES PUSH-ON COUPLINGS

HOSE COMPATIBILITY FOR 8000S SERIES

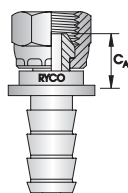
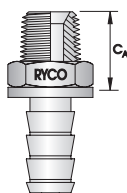
For RYCO Hose Series PL1, PL1D, PL300 and RQP6 all sizes.

BSP

8010S
(801SS)

8020S
(802SS)

60° SEAT



HOSE SIZE		THREAD SIZE	DASH SIZE	BSPT MALE		BSPP FEMALE	
DN	inch	inch		PART NO	C _A	PART NO	C _A
6	1/4	1/4	-0404	8010S-0404	22	8020S-0404	15
10	3/8	1/4	-0604	8010S-0604	22		
10	3/8	3/8	-0606	8010S-0606	22	8020S-0606	17
12	1/2	1/2	-0808	8010S-0808	29	8020S-0808	19

NOTE: Hose Compatibility for the **TT000S** series can be found on page 29.

TECHNICAL



RYCO

PAGE	SECTION
37 to 58	HOSE SELECTION AND HOSE ASSEMBLIES
37	Hose Size Selection Nomograph
38	How to Order Hose Assemblies
39	How to Order Hose Assemblies & Cut-Off Allowance (C _A)
40 to 515	HOSE ASSEMBLY GUIDES
40	BITELOK Non-Skive Hose Assembly
41	BITELOK Skive Hose Assembly
42	Assembly Instructions – RTH1 Hoses
43	Push-on Hose Assembly
44	Assembly Instructions – TP7T, TP7TN, TP8T and TP8TN Twin Hose
45	Assembling Threaded Connections to Prevent Galling
46 to	THREAD AND CONNECTOR DATA
46	Guide to Thread and Connector Working Pressures
51	Important Note regarding Thread Dash Size/Tube Dash Size
52	Thread and connector Identification
53	Corrosion of Dissimilar Metals
54 to 55	TORQUE ASSEMBLY VALUES
56 to 57	MISCELLANEOUS
56 to 57	RYCO Terms of Sale
58	Abbreviations

IMPORTANT NOTE:

When utilising products catalogued in this Product Technical Manual in installations or in products requiring further processing, designers, assembly fabricators, users and other relevant personnel shall adhere to the guidelines listed in the Technical section herein, and also the relevant data contained in the current edition of the RYCO Product Technical Manual-Hydraulics insofar as they apply (see adjacent table).

All RYCO Stainless Steel hose couplings listed herein are matched to the equivalent size of RYCO hose series' as stated in the Couplings section. RYCO Stainless Steel hose couplings can be assembled using the identical parameters to the equivalent standard steel RYCO hose coupling series to matched RYCO hoses as listed the current version of the RYCO Crimp Chart.

To access the current copy of either this Product Technical Manual, the RYCO Product Technical Manual – Hydraulics, or the RYCO Crimp Chart and other RYCO literature please visit www.RYCO.com.au

Please observe all relevant data as listed to the right of page from the current edition of the RYCO Product Technical Manual-Hydraulics insofar as they apply.

ADDITIONAL TECHNICAL INFORMATION:

RYCO PRODUCT TECHNICAL MANUAL – HYDRAULICS

Section Name	Subsection Name
TECHNICAL	Hose Selection
TECHNICAL	Safety Guide / Safety Guide – Maximum Temperature Limits
TECHNICAL	Characteristics of Hose Elastomers
TECHNICAL	Chemical Compatibility for Hose
TECHNICAL	Hose Assembly – Installation Guide
TECHNICAL	Factor of Safety – Hose Assemblies
TECHNICAL	Thread and Connector Identification

HOSE SIZE SELECTION NOMOGRAPH

INDICATING FLOW CAPACITY OF HOSE ASSEMBLIES AT RECOMMENDED FLOW VELOCITIES

SELECTING THE RIGHT HOSE SIZE

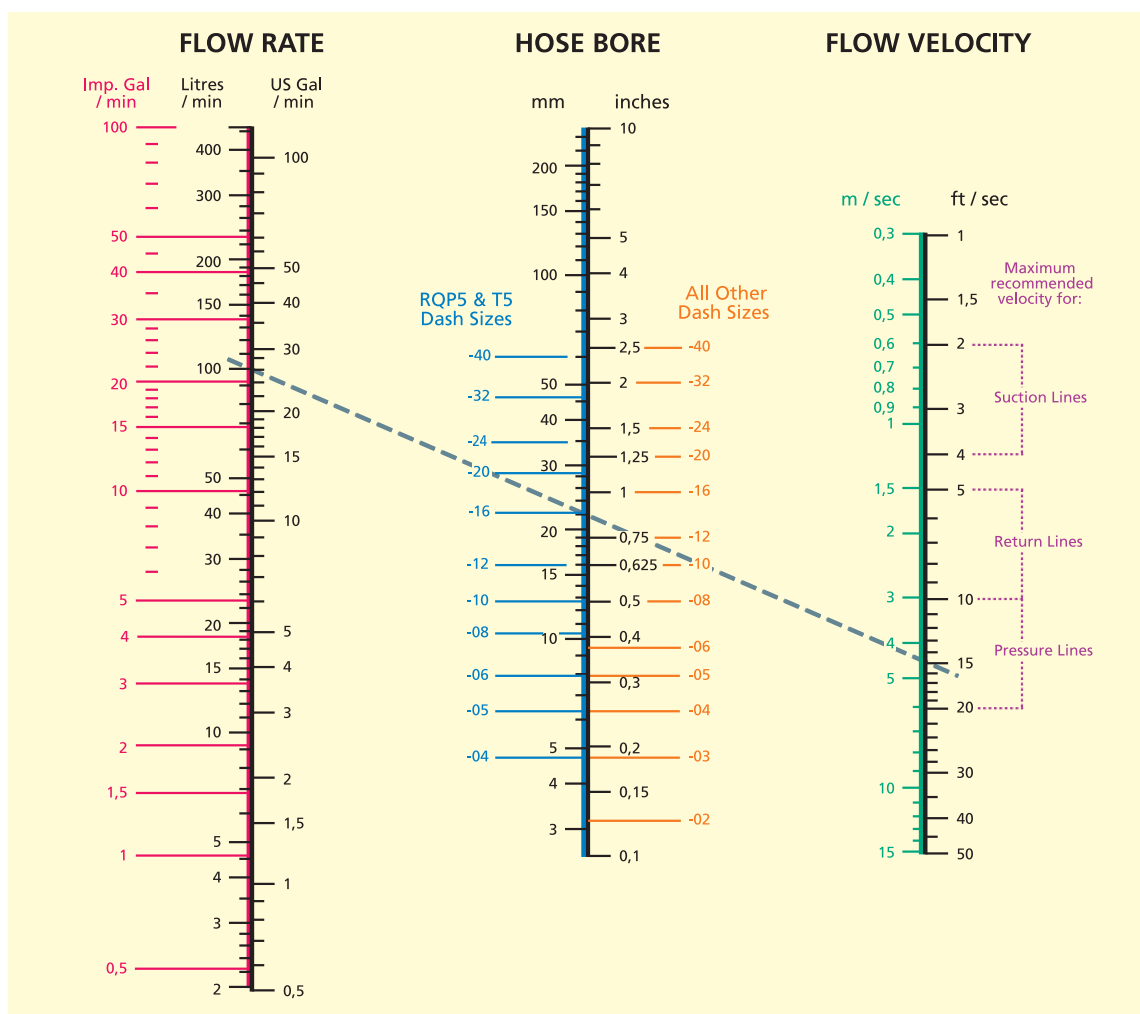
With this nomograph, you can easily select the correct Hose ID size, Desired Flow Rate and Recommended Flow Velocity. If any two of these factors are known, the third can be determined.

TO USE THIS NOMOGRAPH:

1. Pick the two known values.
2. Lay a straightedge to intersect the two values.
3. Intersection on the third vertical line gives the value of that factor.

Example: To find the bore size for a Pressure Line consistent with a Flow Rate of 100 litres per minute (26 US or 22 Imperial gallons per minute), and a Flow Velocity of 4,5 metres per second (14.8 feet per second), connect Flow Rate to Flow Velocity and read Hose Bore on centre scale.

ANSWER: THE LINE CROSSES HOSE BORE BETWEEN -12 AND -16 ON "ALL OTHER DASH SIZES" SIDE OF HOSE BORE AXIS, SO A -16 HOSE IS REQUIRED. IF RQP5 OR T5 HOSE IS TO BE USED, FOR THIS EXAMPLE -16 WOULD ALSO BE REQUIRED.



The velocity of the fluid should not exceed the range shown in the right hand column. When oil velocities are higher than recommended in the chart, turbulent flow occurs, resulting in loss of pressure and excessive heating. For long hoses and/or high viscosity oil, or if the flow of hydraulic fluid is continuous, it is recommended to use figures at the lower end of the Maximum Recommended Velocity range. For short hoses and/or low viscosity oil, or if the flow of hydraulic fluid is intermittent or for only short periods of time, figures at the higher end of the Maximum Recommended Velocity range can be used.

A FURTHER EXAMPLE WILL HELP YOU TO USE THIS CHART:

Determine the hose size required to carry 40 litres of oil per minute and determine the velocity of the oil through the hose assembly. The assembly is to be used as a pressure line and the flow will be continuous.

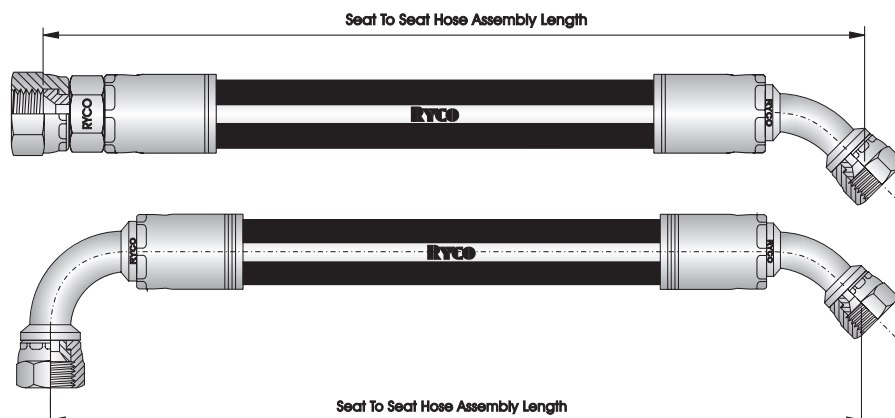
Locate the flow, 40 litres per minute (left hand column), and velocity, 15 feet per second (right hand column), since 15 is the centre of the Pressure Lines Maximum recommended velocity range. Lay a straight edge across these two points. The straight edge crosses the centre column just above the -08 on "All Other Dash Sizes" side of Hose Bore axis. Keeping the straight edge on 40 litres per minute, cross the centre column at -08 and -10 sizes and read the Flow Velocity in the right hand column. It can be seen that using -08 Hose Size, Flow Velocity will be 18 feet per second, and for -10 Hose Size, Flow Velocity will be 11 feet per second. As the flow is continuous, -10 Hose Size is recommended.

HOW TO ORDER HOSE ASSEMBLIES & CUT-OFF ALLOWANCE (CA)

HOSE ASSEMBLIES OF SPECIFIC LENGTHS

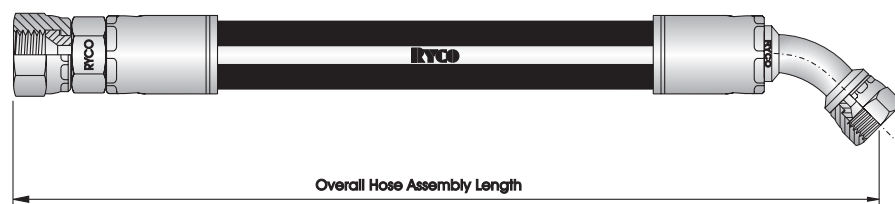
All RYCO hose assemblies are manufactured seat to seat length unless otherwise specified by customer. The length of a Hose Assembly can be measured in three ways:

1. SEAT TO SEAT LENGTH. (RYCO STANDARD, UNLESS OTHERWISE SPECIFIED).



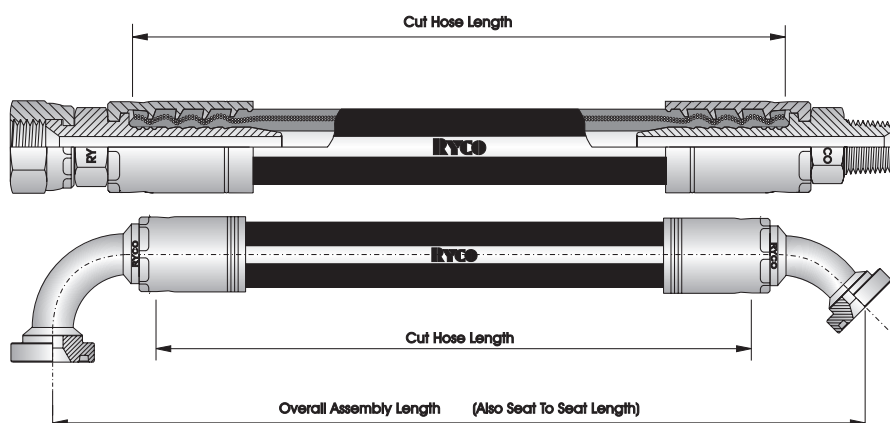
Length is measured from tip of seat to tip of seat.

2. OVERALL LENGTH. (OA)



Length is measured from tip of nut to tip of nut.

3. CUT HOSE LENGTH. (CL)



This is the length that the hose is cut to before couplings are attached. The length of the couplings is extra.

NOTE: For male fittings and flanged fittings, seat and overall length measurement points are the same.

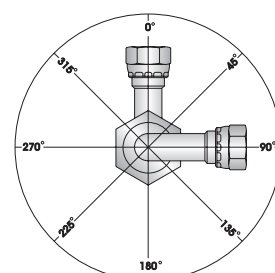
ORIENTATION OF FITTINGS.

Proper positioning of elbow end fittings on a hose is governed by the offset angle, or the amount of angular offset between connecting parts in the installation. If this angle of orientation is not correct in the construction of a hose assembly the performance and life of the assembly will be greatly reduced.

Orientation is determined by the number of degrees between the fitting furthest from the viewer and the fitting nearest to the viewer, measured in a clockwise direction.

ORIENTATION TOLERANCES:

± 3° on lengths up to 600 mm (24").
± 5° on lengths over 600 mm (24").



HOW TO ORDER HOSE ASSEMBLIES

When ordering Hose Assemblies, specifying by the following system will assist; or alternatively supply a clear, concise drawing or sketch.

1. **Hose Type.**
2. **(Hose Protection or extra operations to hose)** - if applicable.
3. **Hose Assembly Length** (expressed in mm), followed by method of measurement:
blank if "Seat to Seat Length"
-OA if "Overall Length"
-CL if "Cut Hose Length"
4. **Fitting End 1.**
5. **Fitting End 2.**
6. **Angle of Orientation** if both fittings are elbows and/or tube bends.

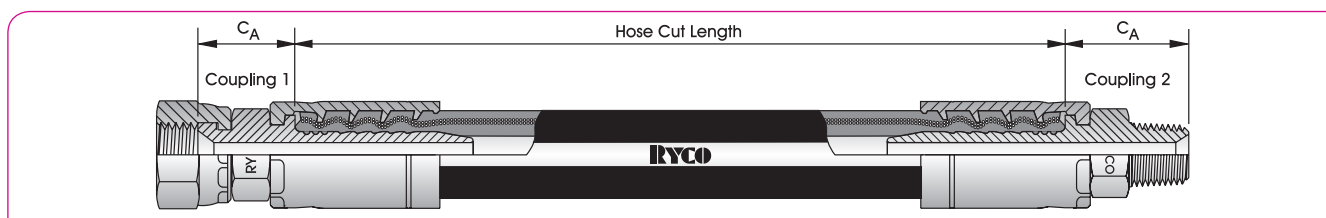
EXAMPLES:

1. **T3008D * 1830 * T2090S-0808 * T2040S-0814** – Hose will be made 1830 mm Seat to Seat.
2. **T3008D * 1830-OA * T2090S-0808 * T2040S-0814** – Hose will be made 1830 mm tip of T2090S male to tip of T2040S nut.
3. **T28D * 1830 * T2050S-0808 * T2730S-0824 @ 135°** – Hose assembly will be manufactured so that when T2050S-0808 is furthest away the T2730S-0824 will be oriented 135° clockwise.
4. **T5008D * 1640-CL * T2010S-0812 * T2040S-0817** – Hose will be cut to 1640 mm and length of fittings will be extra.
5. **H6012D * (RSG-32 * 1000) * 1000-OA * T7630S-1236 * T7720S-1236** – Hose will be covered with RSG for full length of hose assembly. Length will be overall from T7630S tip to T7720S bend centreline.
6. **RQP212 * (PIERCE * 2200) * 2200 * T2090S-1212 * T2040S-1217** – Hose cover will be pierced/pin pricked.
7. **T18D * 1830 * T2010S-0808 * T2020S-0808 + S275S-0808** – The length of the S275S-0808 is extra, not included in the 1830 mm.

CUT-OFF ALLOWANCE (C_A)

Values for Cut-off Allowance (C_A) dimensions are published in this Product Technical Manual.

C_A dimensions allow calculation of the Hose Cut Length required to make a Hose Assembly of a particular Seat to Seat Length.



EXAMPLE:

For a Hose Assembly using **T2040S-0609** coupling one end, and **T2090S-0606** coupling other end, with a required Seat to Seat Length of 750 mm, calculate the Hose Cut Length required.

From page 12, C_A dimension for T2040S-0609 is 22 mm. This is "coupling 1" for the required hose assembly.

From page 11, C_A dimension for T2090S-0606 is 33 mm. This is "coupling 2" for the required hose assembly.

$$\text{Cut Length of Hose} = \text{Seat to Seat Length of Hose Assembly} - C_A (\text{coupling 1}) - C_A (\text{coupling 2}) = 750 \text{ mm} - 22 \text{ mm} - 33 \text{ mm} = 695 \text{ mm}$$

IMPORTANT NOTES:

1. CHECK AND MEASURE COUPLING BEFORE CUTTING HOSE

For all Couplings, before calculating the Cut Length of the hose, measure and check that the C_A dimension of the physical coupling complies with that published. C_A dimensions may vary due to manufacturing method or design refinement.

2. HOSE ASSEMBLY LENGTH GROWTH AFTER COUPLING ATTACHMENT

The C_A dimension is measured from where the hose abuts when fully inserted, to the connection end seat of the coupling. With most Crimp Couplings¹, and Field Attachable Couplings having ferrules²; due to compression of the hose within the coupling after attachment, a growth in length occurs, in addition to the published C_A dimension. Growth varies with different types and sizes of hose and couplings. For longer hoses, and non-critical applications, it is common practice to ignore the growth, as the extra length generated usually does not affect the function of the hose assembly. In applications where the length of the hose assembly is critical, the growth must be allowed for when calculating Cut Length of hose. RYCO recommends measuring the growth when the first coupling is attached by measuring between reference points marked on the coupling and hose before and after coupling attachment, then adjusting the Cut Length of the hose to compensate.

3. See note on page 7 regarding Drop Length (DL) and Cut-off Allowance (C_A) published dimensions.

4. For Hose Assemblies, the following must be considered: Maximum Working Pressure of the Hose; End Style (Connector Termination), see pages 46 to 50, and Minimum Free Length, in the "Safety Guide".

NOTE:

1) For T4000S Series couplings with SR and SRF hose series, growth varies and must be measured each time.

2) For practical purposes, 8000S Series Push-On and 33000S Series couplings do not experience extra growth.

ASSEMBLY INSTRUCTIONS FOR:

1. RYCO BITELOK T2000S, and T7000S SERIES COUPLINGS WITH RYCO NON-SKIVE HOSE.

USE ONLY MATCHED SIZES OF RYCO T3000D, T3000S, T3600C, T3600D, T3600S, T4000D, T4000S, T5000D, T5000S, T6000D, T6000S, H3000D, H3000S, H4000D, H4000S, H5000C, H5000D, H5000S, H6000D, H6000S, BT1, CS1000, D2B, DF2D, DF2S, E2, EC, H12D, H12S, H13D, H13S, HSHD, HSPD, JS4000, JS4000B, JS4000G, JS6000, JS6000B, JS6000G, MS1000, PW2, RQP1, RQP2, R4SHD, R4SPD, T1D, T1F, T1S, T2C, T2D, T2S, TJ2D, TW1 and TXA2D SERIES HOSE.

2. RYCO BITELOK T4000S SERIES COUPLINGS WITH RYCO NON-SKIVE HOSE.

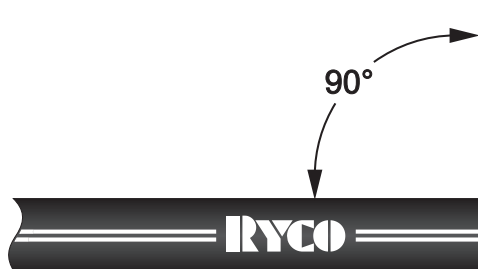
USE ONLY MATCHED SIZES OF RYCO M2, M2G, MP1, PL1, PL1D, PL300, RQP5, RQP6, RST, SR, SRF, SRX and T5 SERIES HOSE.

3. RYCO BITELOK TP000S SERIES COUPLINGS WITH RYCO NON-SKIVE HOSE.

USE ONLY MATCHED SIZES OF RYCO TP7, TP7N, TP7T, TP7TN, TP8, TP8N, TP8T, TP8TN and TP3000 SERIES HOSE.

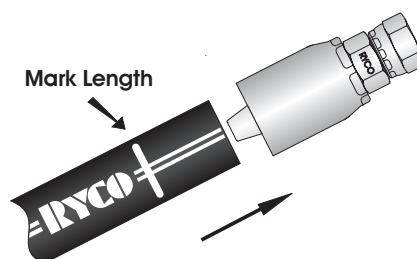
(See page 505 for instructions for separating of ends of TP7T, TP7TN, TP8T and TP8TN Series.)

STEP ONE



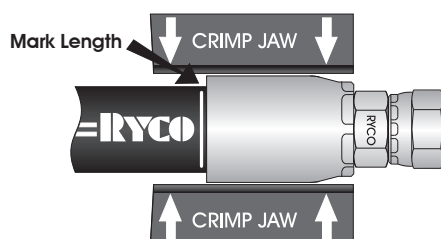
- Cut hose to required length using a cut-off saw.
- Ensure hose is cut squarely.
- Clean hose bore.

STEP TWO



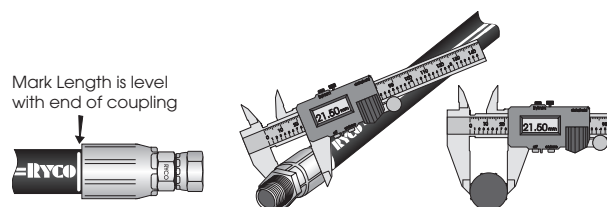
- Mark the Mark Length onto the hose (Mark Length dimension from "RYCO Crimp Chart").
- Push hose into the fitting (lightly lubricate the hose bore only if necessary as excess lubrication may reduce hose assembly impulse life) until the mark on the hose is even with the end of the ferrule.
- **Note: Push the hose all the way into the fitting.**

STEP THREE



- Place assembled end into the jaws of crimp machine.
- Operate machine to crimp ferrule to predetermined diameter. (Refer to "RYCO Crimp Chart").

STEP FOUR



- Open the crimp machine and remove the assembly.
- Check the crimp diameter with a caliper or micrometer. Crimp diameter should be measured halfway along ferrule. Measure between the ridges, and make sure that the caliper fingers do not touch the ridges.
- Check that the Mark Length mark is still visible and even with the end of the ferrule to ensure coupling has not moved during crimping.

NOTES

- Extra special care must be exercised in the preparation, assembly and crimping of these fittings due to the very high pressures and end loads encountered.
- RYCO Crimp Chart detailing Mark or Skive Length and Crimp Diameter is available from RYCO Hydraulics.
- **Note: Do not use lubricant for M2G hose, or hose to be used with volatile gases or oxygen.**
- * For TP7, TP7N, TP7T, TP7TN, TP8, TP8N, TP8T, TP8TN, TP3000 and TPGL Hose Series it is preferable to lightly lubricate using a PTFE or Silicon-based aerosol spray lubricant. **Use lubricant only if necessary; use sparingly if required.**

HOW TO ORDER BITELOK NON-SKIVE HOSE COUPLINGS

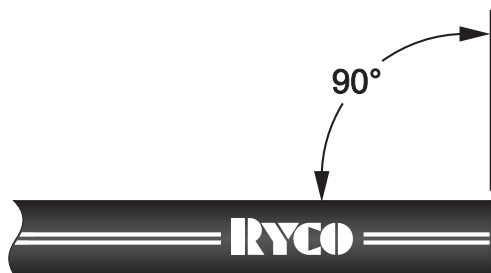
- The RYCO BITELOK Non-Skive Coupling is a one-piece fitting. BITELOK Non-Skive Couplings do not require the hose to be skived externally or internally.
- As the BITELOK Non-Skive Coupling is a complete coupling, simply order by Part Number.

ASSEMBLY INSTRUCTIONS FOR:

RYCO BITELOK T7000S SERIES COUPLINGS WITH RYCO SKIVE HOSE.

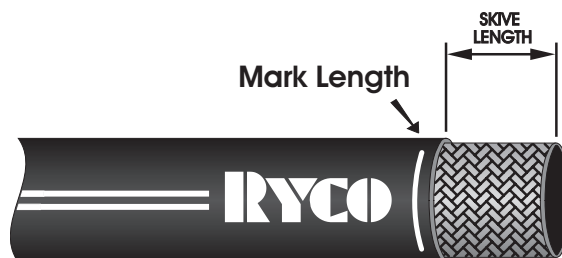
USE ONLY MATCHED SIZES OF RYCO H13D, H13S, R4SPD and R4SPS SERIES HOSE.

STEP ONE



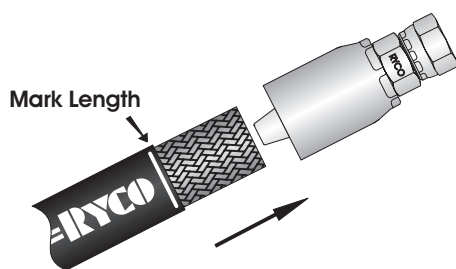
- Cut hose to length required using a cut-off saw.
- Ensure hose is cut squarely.
- Clean hose bore.

STEP TWO



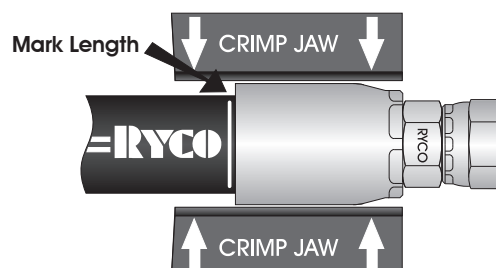
- Mark the Skive Length onto the hose. (Refer to "RYCO Crimp Chart").
- Cut rubber cover around and down to wire reinforcement then slit lengthwise.
- Raise flap and pull off with pliers.
- Measure coupling insertion depth and add a Mark Length Line on the outer cover as shown.

STEP THREE



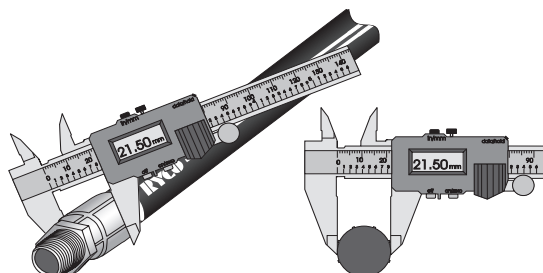
- Push hose into the fitting (lightly lubricate the hose bore only if necessary as excess lubrication may reduce hose assembly impulse life) until the mark on the hose is even with the end of the ferrule.
- **Note: Push the hose all the way into the fitting.**
- **Note: Do not use lubricant for hose to be used with volatile gases or oxygen.**

STEP FOUR



- Place assembled end into jaws of crimp machine.
- Operate machine to crimp ferrule to predetermined diameter. (Refer to "RYCO Crimp Chart").

STEP FIVE



- Open crimp machine and remove assembly.
- Check crimp diameter with caliper or micrometer. Crimp diameter should be measured halfway along the ferrule. Measure between the ridges, and make sure that the caliper fingers do not touch the ridges.
- Check that the ferrule still completely covers the skived part of the hose to ensure coupling has not moved during crimping.

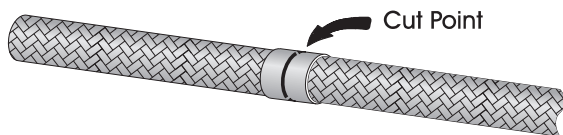
NOTE

- Extra special care must be exercised in the preparation, assembly and crimping of these fittings due to the very high pressures and end loads encountered.
- The latest RYCO Crimp Chart detailing Mark or Skive Length and Crimp Diameter is available from the RYCO website.

ASSEMBLY INSTRUCTIONS FOR:

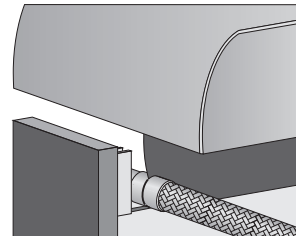
TT000S SERIES ONE-PIECE COUPLINGS. USE ONLY MATCHED SERIES OF RYCO RTH1 SERIES HOSE.

STEP ONE



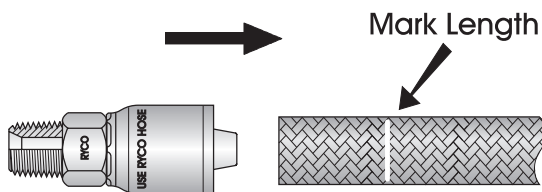
- Tape with masking tape at the cut position to prevent wire braid flaring.

STEP TWO



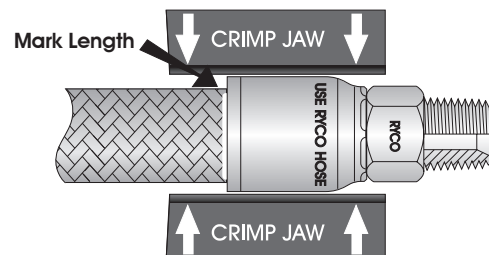
- Cut hose to length. Ensure hose is cut squarely.
- Clean hose bore.
- **WARNING: Do not smoke in the vicinity when cutting RTH1 hoses because fumes created are toxic and may mix with cigarette smoke when inhaled.**

STEP THREE



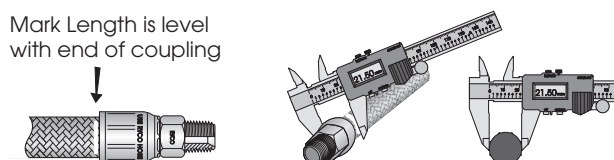
- Refer to "RYCO Crimp Chart" for Mark Length of Coupling.
- Mark outer cover with Mark Length.
- Push hose into the fitting (lightly lubricate the hose bore only if necessary as excess lubrication may reduce hose assembly impulse life) until the mark on the hose is even with the end of the ferrule*.
- **Note: Push the hose all the way into the fitting.**
- **Note: Do not use lubricant for hose to be used with volatile gases or oxygen.**

STEP FOUR



- Place assembled end into the jaws of crimp machine.
- Operate machine to crimp ferrule to predetermined diameter. (Refer to "RYCO Crimp Chart").
- Open the crimp machine.
- Check that the Mark Length mark is still visible and even with the end of the ferrule to ensure coupling has not moved during crimping.

STEP FIVE



- Check that full length of ferrule has been crimped.
- Check the crimp diameter with a caliper or micrometer. Crimp diameter should be measured halfway along ferrule. Measure between the ridges, and make sure that the caliper fingers do not touch ridges.

NOTE

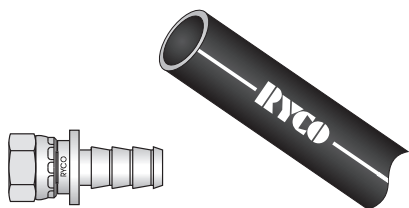
- **Extra special care must be exercised in the preparation, assembly and crimping of these fittings due to the very high pressures and end loads encountered.**
- **The latest RYCO Crimp Chart detailing Mark or Skive Length and Crimp Diameter is available from the RYCO website.**
- **Note: Do not use lubricant for hose to be used with volatile gases or oxygen.**

ASSEMBLY INSTRUCTIONS FOR:

8000S SERIES PUSH-ON COUPLINGS. USE ONLY RYCO PL1, PL1D, PL300 and RQP6 SERIES HOSE.

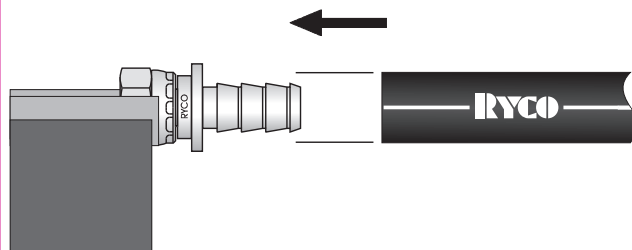
INTRODUCTION

STEP ONE



- Cut hose to required length with a sharp knife.

STEP TWO

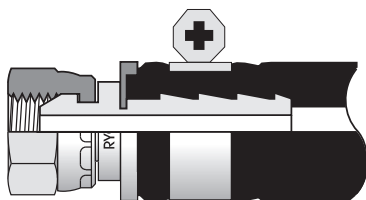


- Push hose onto fitting until hose end bottoms underneath cap as shown.

COUPLINGS

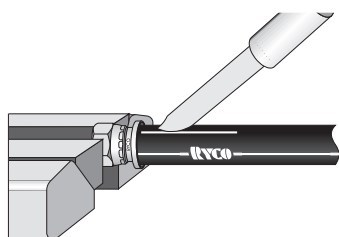
TECHNICAL

STEP THREE



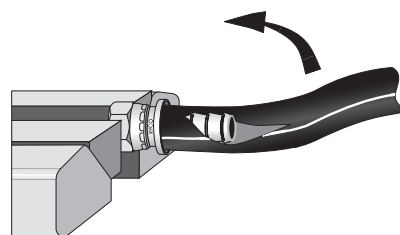
- If hose assembly is to be used at above 50% of Maximum Working Pressure, or in a potentially dangerous or critical application, a clamp must be used.
- Do not overtighten clamp as this may damage hose.

REMOVING COUPLINGS, STEP ONE



- Remove clamp if fitted.
- Slit hose length-wise, from cap to end of hose tail.

REMOVING COUPLINGS, STEP TWO



- Sharply bend hose and remove.

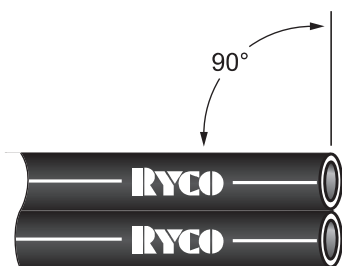
ASSEMBLY INSTRUCTIONS FOR:

SEPARATION OF THE ENDS OF TP7T, TP7TN, TP8T and TP8TN TWIN HOSE.

Note: RYCO TP7T, TP7TN, TP8T and TP8TN Hose must be separated at the ends to permit the attachment of the couplings. Procedure is as follows.

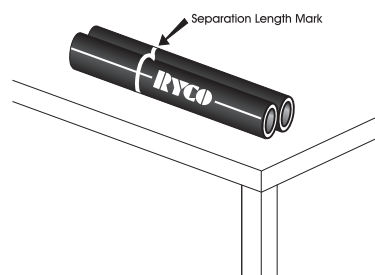
The latest RYCO Crimp Chart detailing Crimp Diameter and Mark Length is available from www.RYCO.com.au

STEP ONE



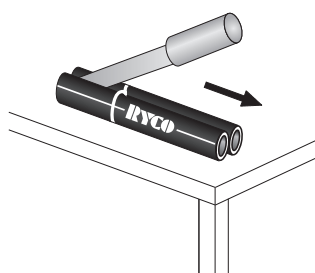
- Cut hose to length required using a sharp knife.
- Ensure hose is cut squarely.
- Clean hose bore.

STEP TWO



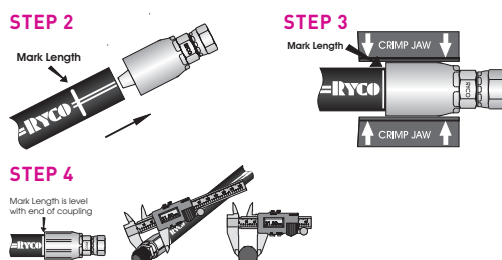
- Arrange the end of the twin line hose so that it is lying straight and flat, resting on the bottom of both hoses, on a horizontal work surface.
- Mark the length to be separated on the cover of the hoses.
- The separation length required may vary depending on the crimper being used.
- Separation length must allow each hose end to be inserted into the crimper without kinking the other hose.

STEP THREE



- Hold the hoses flat on the work bench, and lightly score along the join between the two hoses with a blunt knife.
- Keep the knife vertical to avoid cover damage. It may be necessary to score along the join several times.
- Take care not to damage the covers of the hoses.
- Turn the hose over and repeat the above to score the other side of the join.
- The hoses will now be able to be separated by pulling apart.
- Inspect the covers to ensure there is no damage, if the cover is cut or the reinforcement is exposed, the hoses must not be used.

STEP FOUR, FIVE, SIX



- Follow Step Two, Three and Four of page ??? (BITELOK Non-Skive Hose Assembly) for each end of the hose.

STEP SEVEN



- After crimping the couplings, the hoses can be tied together at the separation area with tape or a cable tie to prevent the hoses becoming further separated accidentally.

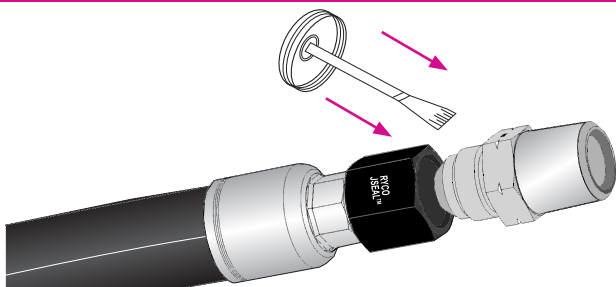
ASSEMBLING THREADED CONNECTIONS TO PREVENT GALLING

ASSEMBLY INSTRUCTIONS FOR:

Application of Anti-Galling lubricant to RYCO threaded Stainless Steel products.

There is often a risk of thread galling (seizing) occurring when connecting threaded-type connections made from Stainless Steel. To reduce the risk of thread galling (seizing) of threaded-type connections, RYCO recommends the use of appropriate anti-galling (anti-seize) lubricants prior to make-up and assembly of the threaded connection. This procedure outlines the basic steps for applying anti-galling lubricant to RYCO Stainless Steel threaded connections where galling of threads is a potential issue.

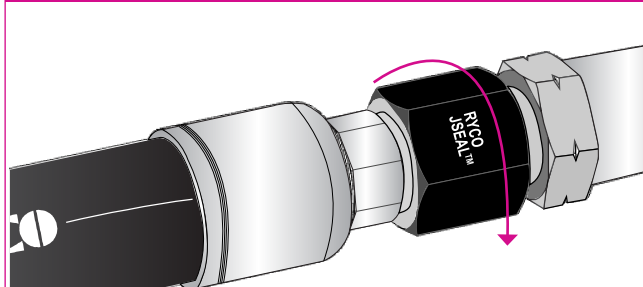
STEP ONE



Using the applicator provided, apply anti-galling lubricant sparingly to all threads on the parts to be assembled. Ensure complete coverage of threads with lubricant.

NOTE: When applying anti-galling lubricant, ensure excess lubricant will not enter the hydraulic system during or after assembly of the threaded connection, and that the lubricant does not contact the conical or flat-face style sealing surfaces of the connection.

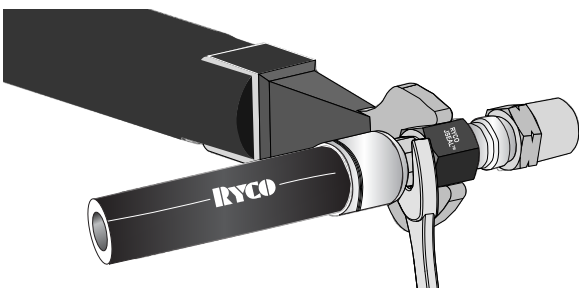
STEP TWO



Screw the threaded components together by hand until firm contact is made between the sealing surfaces.

NOTE: Sealing surfaces include mating conical and flat-face type sealing surfaces, and also pressure-tight joints where connection and sealing are made on the threads (for example, NPT and BSPT Port connections).

STEP THREE



Using a calibrated torque wrench, tighten the connection to the recommended torque value.

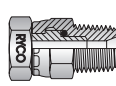
Remove excess lubricant from around the surrounding area of the connection.

WORKING PRESSURES - ADAPTORS, HOSE COUPLINGS AND HOSE ASSEMBLIES.

Since many factors influence the pressure at which a hydraulic system will, or will not, perform satisfactorily, maximum working pressures listed below should be used as a guide only and not as a "standard" nor "specification", nor construed as a "guaranteed minimum." Within the fluid power industry, many criteria are used for the determination of pressure capability. Various fibre stresses, minimum yields and design factors are applied, commensurate with total system conditions. Thus, it is impractical to lay down specific allowable working pressures that satisfy all design criteria. Unless otherwise specified in this document, and given correct working conditions, including, but not limited to, torque setting, assembly, alignment, support, pressures (internal and external), temperature limits, environmental, installation, vibration free, damage free, chemical, cleanliness and regular maintenance and inspection, the following may be used as a guide to maximum working pressure. For further technical assistance contact RYCO Hydraulics Technical Department or your RYCO Hydraulics distributor.

The Maximum Working Pressure of a Hose Assembly is the lesser rated Working Pressure of the Hose or Tube or End Style (Connector termination). The Maximum Rated Working Pressure of an Adaptor with a combination of Thread / End Styles and sizes, is the Maximum Working Pressure of the least rated end.

BSP	BSPT MALE	BSPP MALE	BSPT MALE LIVE SWIVEL	BSPT FEMALE FIXED	BSPP FEMALE SWIVEL (CRIMP NUT)	BSPP FEMALE SWIVEL (WIRE NUT)	BSPP MALE NON-ADJUSTABLE (O RING & RETAINING RING)	BSPP MALE ADJUSTABLE (O RING & RETAINING RING)
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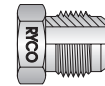
THREAD SIZE	DASH SIZE	MAX. WORKING PRESSURE															
inch		bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi
1/8	-02	690	10000	690	10000	420	6100	690	10000	690	10000			350	5100	380	5500
1/4	-04	690	10000	690	10000	420	6100	690	10000	690	10000			350	5100	350	5100
3/8	-06	690	10000	620	9000	420	6100	690	10000	620	9000			350	5100	350	5100
1/2	-08	690	10000	480	7000	350	5100	690	10000	480	7000			350	5100	310	4500
5/8	-10	690	10000	480	7000	280	4100	690	10000	480	7000	550	8000	350	5100		
3/4	-12	620	9000	450	6500	280	4100	620	9000	420	6100	420	6100	280	4100	280	4100
1	-16	620	9000	350	5100	215	3100	620	9000	350	5100	350	5100	215	3100	215	3100
1.1/4	-20	480	7000	215	3100			480	7000	215	3100	215	3100	215	3100	170	2500
1.1/2	-24	420	6100	100	1500			420	6100			100	1500	215	3100		
2	-32	350	5100	100	1500			350	5100			100	1500	180	2600		
2.1/2	-40	215	3100														

BSP	BSPP MALE (BONDED SEAL)	BSPP MALE (ENCAPSULATED SEAL)
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THREAD SIZE	DASH SIZE	MAXIMUM WORKING PRESSURE			
inch		bar	psi	bar	psi
1/8	-02	420	6100	620	9000
1/4	-04	420	6100	620	9000
3/8	-06	420	6100	480	7000
1/2	-08	350	5100	480	7000
5/8	-10	350	5100	480	7000
3/4	-12	280	4100	480	7000
1	-16	280	4100	370	5300
1.1/4	-20	280	4100	280	4100
1.1/2	-24	215	3100	280	4100
2	-32	150	2100	230	3300

JIS	BSPP MALE 60° CONVEX SEAT	BSPP FEMALE SWIVEL 60° CONCAVE SEAT
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THREAD SIZE	DASH SIZE	MAX. WORKING PRESSURE			
inch		bar	psi	bar	psi
1/4	-04	480	7000	480	7000
3/8	-06	450	6500	450	6500
1/2	-08	350	5100	350	5100
5/8	-10				
3/4	-12				
1	-16				

GUIDE TO THREAD AND CONNECTOR WORKING PRESSURES

INTRODUCTION

COUPLINGS

TECHNICAL

NPT	NPT MALE	NPT MALE LIVE SWIVEL	NPT FEMALE FIXED	NPSM FEMALE SWIVEL (CRIMP NUT)	NPSM FEMALE SWIVEL (WIRE NUT)

JIS (KOMATSU)	METRIC FEMALE SWIVEL 60° CONCAVE SEAT

THREAD SIZE	DASH SIZE	MAX. WORKING PRESSURE									
inch		bar	psi	bar	psi	bar	psi	bar	psi	bar	psi
1/8	-02	760	11000	420	6100	760	11000	690	10000		
1/4	-04	760	11000	420	6100	760	11000	690	10000		
3/8	-06	690	10000	420	6100	690	10000	690	10000		
1/2	-08	690	10000	350	5100	690	10000	550	8000		
5/8	-10										
3/4	-12	690	10000	280	4100	690	10000	450	6500	480	7000
1	-16	500	7200	280	4100	500	7200	350	5100	420	6100
1.1/4	-20	350	5100			350	5100	280	4100	420	6100
1.1/2	-24	350	5100			350	5100	280	4100	280	4100
2	-32	350	5100			350	5100	215	3100	215	3100
2.1/2	-40	215	3100							215	3100

THREAD SIZE	DASH SIZE	MAX. WORKING PRESSURE	
mm		bar	psi
M14 x 1,5	-14	420	6100
M16 x 1,5	-16	420	6100
M18 x 1,5	-18	420	6100
M22 x 1,5	-22	380	5500
M24 x 1,5	-24	350	5100
M27 x 2,0	-27	280	4100
M30 x 1,5	-30	280	4100
M33 x 1,5	-33	215	3100
M33 x 2,0	-33	215	3100
M36 x 1,5	-36	170	2500
M42 x 1,5	-42	170	2500
M50 x 2,0	-50	100	1500
M60 x 2,0	-60	70	1000

JIC	JIC MALE*	RYCO JSEAL™	JIC FEMALE SWIVEL (CRIMP NUT)	JIC FEMALE SWIVEL (WIRE NUT)	JIC FEMALE SWIVEL HIGH PRESSURE ("V" SERIES)

TUBE SIZE	THREAD SIZE	DASH SIZE	MAX. WORKING PRESSURE									
inch	inch		bar	psi	bar	psi	bar	psi	bar	psi	bar	psi
3/16	3/8	-06	690	10000			690	10000				
1/4	7/16	-07	690	10000	700	10150	690	10000				
5/16	1/2	-08	620	9000			620	9000				
3/8	9/16	-09	550	8000	700	10150	550	8000				
1/2	3/4	-12	690	10000	700	10150	690	10000				
5/8	7/8	-14	550	8000	630	9150	550	8000	590	8500		
3/4	1.1/16	-17	480	7000	560	8100	480	7000	550	8000		
7/8	1.3/16	-19	420	6100	490	7100	380	5500	420	6100		
1	1.5/16	-21	420	6100	420	6100	320	4600	240	3500	350	5100
1.1/4	1.5/8	-26	350	5100	420	6100	215	3100	240	3500	350	5100
1.1/2	1.7/8	-30	215	3100	350	5100			215	3100	350	5100
2	2.1/2	-40	150	2100	280	4100			110	1600		
2.1/2	3	-48										

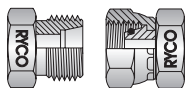
* When used with RYCO JSEAL™ connections, the JIC Male connection Max. Working Pressure may be increased to the equivalent RYCO JSEAL™ Max. Working Pressure rating when assembled using the RYCO JSEAL™ Assembly Procedure.

TECHNICAL

GUIDE TO THREAD AND CONNECTOR WORKING PRESSURES

METRIC

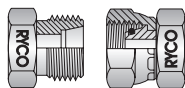
DKOL (LIGHT SERIES)
MALE & FEMALE O RING



TUBE SIZE	THREAD SIZE	DASH SIZE	MAX. WORKING PRESSURE	
mm	mm		bar	psi
6	M12 x 1,5	-12	430	6300
8	M14 x 1,5	-14	430	6300
10	M16 x 1,5	-16	430	6300
12	M18 x 1,5	-18	350	5100
15	M22 x 1,5	-22	350	5100
18	M26 x 1,5	-26	350	5100
22	M30 x 2,0	-30	280	4100
28	M36 x 2,0	-36	215	3100
35	M45 x 2,0	-45	180	2600
42	M52 x 2,0	-52	180	2600

METRIC

DKOS (HEAVY SERIES)
MALE & FEMALE O RING



TUBE SIZE	THREAD SIZE	DASH SIZE	MAX. WORKING PRESSURE	
mm	mm		bar	psi
6	M14 x 1,5	-12	690	10000
8	M16 x 1,5	-14	690	10000
10	M18 x 1,5	-16	690	10000
12	M20 x 1,5	-20	620	9000
14	M22 x 1,5	-22	620	9000
16	M24 x 2,0	-24	420	6100
20	M30 x 2,0	-30	420	6100
25	M36 x 2,0	-36	420	6100
30	M42 x 2,0	-45	420	6100
38	M52 x 2,0	-52	420	6100

METRIC

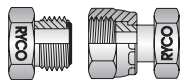
BONDED SEAL



THREAD SIZE	DASH SIZE	MAX. WORKING PRESSURE	
mm		bar	psi
M10	-10	350	5100
M12	-12	350	5100
M14	-14	350	5100
M16	-16	350	5100
M18	-18	350	5100
M20	-20	280	4100
M22	-22	280	4100
M24	-24	250	3625
M26	-26	250	3625
M27	-27	280	4100
M30	-30	215	3100
M33	-33	215	3100
M36	-36	215	3100
M42	-42	215	3100
M48	-48	215	3100

ORFS

O RING FACE SEAL



TUBE SIZE	THREAD SIZE	DASH SIZE	MAX. WORKING PRESSURE	
inch	inch		bar	psi
1/4	9/16	-09	690	10000
3/8	11/16	-11	690	10000
1/2	13/16	-13	630	9150
5/8	1	-16	630	9150
3/4	1.3/16	-19	480	7000
1	1.7/16*	-23	420	6100
1.1/4	1.11/16*	-27	280	4100
1.1/2	2*	-32	280	4100

* Wire Nut or Slip Nut used

SAE

SAE
45° FLARE

SAE
INVERTED
FLARE



TUBE SIZE	THREAD SIZE	DASH SIZE	MAX. WORKING PRESSURE			
inch	inch		bar	psi	bar	psi
1/4	7/16	-07	690	10000	215	3100
5/16	1/2	-08	690	10000	215	3100
3/8	5/8	-10	590	8500	180	2600
7/16	11/16	-11			180	2600
1/2	3/4	-12	550	8000		
5/8	7/8	-14	520	7500		
3/4	1.1/16	-17	420	6100		
1	1.5/16	-21				
1.1/4	1.5/8	-26				
1.1/2	1.7/8	-30				
2	2.1/2	-40				

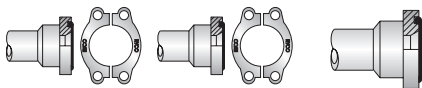
GUIDE TO THREAD AND CONNECTOR WORKING PRESSURES

INTRODUCTION

COUPLINGS

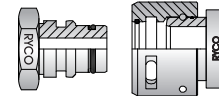
TECHNICAL

SAE FLANGE	CODE 61 SAE FLANGE	CODE 62 SAE FLANGE	RYCO CODE 62C SPECIAL FLANGE
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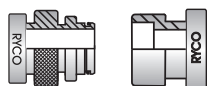
NOM. FLANGE SIZE	DASH SIZE	MAX. WORKING PRESSURE					
		bar	psi	bar	psi	bar	psi
1/2	-08	350	5100	420	6100	420	6100
5/8	-10	350	5100	420	6100	420	6100
3/4	-12	350	5100	420	6100	420	6100
1	-16	350	5100	420	6100	420	6100
1.1/4	-20	280	4100	420	6100	420	6100
1.1/2	-24	215	3100	420	6100	420	6100
2	-32	215	3100	420	6100	420	6100
2.1/2	-40	215	3100				
3	-48	140	2050				

CROCBITE	CROCBITE (HIGH PRESSURE)	CROCBITE (HIGH FLOW)
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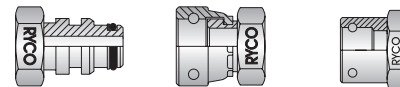
NOMINAL SIZE			MAX. WORKING PRESSURE			
DN	inch	Dash	bar	psi	bar	psi
10	3/8	-10	450	6525		
12	1/2	-12	450	6525		
19	3/4	-20	420	6100		
25	1	-25	420	6100		
31	1.1/4	-32	420	6100		
38	1.1.12	-40	420	6100		
51	2	-50	420	6100	350	5100
63	2.1/2	-63	350	5100	280	4100
76	3	-75			215	3100

RYCO RKV	RKVP (HIGH PRESSURE)	RKVF (HIGH FLOW)
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NOMINAL SIZE			MAX. WORKING PRESSURE			
DN	inch	Dash	bar	psi	bar	psi
10	3/8	-10	450	6525		
12	1/2	-12	450	6525		
19	3/4	-20	420	6100		
25	1	-25	420	6100		
31	1.1/4	-32	420	6100		
38	1.1.12	-40	420	6100		
51	2	-50	420	6100	170	2400
63	2.1/2	-63	350	5100	70	1000
76	3	-75			70	1000

STAPLELOK SUPERLOK SUPER-D	STAPLELOK MALE & FEMALE	SUPERLOK MALE & FEMALE	RYCO SUPER-D MALE & FEMALE
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NOMINAL SIZE			MAX. WORKING PRESSURE					
DN	inch	Dash	bar	psi	bar	psi	bar	psi
6	1/4	-06	420	6100				
10	3/8	-10	420	6100				
12	1/2	-12	415	6020				
16	5/8	-16						
19	3/4	-20	350	5100	420	6100	420	6100
25	1	-25	280	4100	380	5500	420	6100
31	1.1/4	-32	215	3100	350	5100	420	6100
38	1.1/2	-40	215	3100	350	5100	420	6100
51	2	-50	170	2500	350	5100	420	6100
63	2.1/2	-63			350	5100		

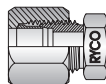
WARNING: Staples must only be used ONCE, they MUST NOT BE RE-USED. This applies to all STAPLELOK, SUPERLOK and RYCO SUPER-D Staples. Failure to observe this warning may result in serious personal injury, or property damage.

RYCO WEO



TUBE SIZE	DASH SIZE	MAX. WORKING PRESSURE	
inch		bar	psi
1/4	-04	350	5100
3/8	-06	350	5100
1/2	-08	350	5100
5/8	-10	350	5100
3/4	-12	350	5100
1	-16	250	3625

TUBE BITE



TUBE SIZE	DASH SIZE	MAX. WORKING PRESSURE	
inch		bar	psi
1/4	-04	260	3750
5/16	-05	260	3750
3/8	-06	260	3750
1/2	-08	220	3200
5/8	-10	220	3200
3/4	-12	220	3200
1	-16	170	2500
1.1/4	-20	140	2000
1.1/2	-24		
2	-32		

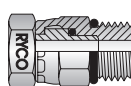
NOTE: Also consider the Maximum Working Pressure of the tubing to be used with TUBE BITE connections.

UN O RING (O RING BOSS)

UN O RING
(O RING BOSS)

UN O RING
(O RING BOSS)
ADJUSTABLE

UN O RING
(O RING BOSS)
LIVE SWIVEL



TUBE SIZE	THREAD SIZE	DASH SIZE	MAX. WORKING PRESSURE					
inch	inch		bar	psi	bar	psi	bar	psi
1/4	7/16	-07	480	7000	420	6100		
5/16	1/2	-08	480	7000	420	6100		
3/8	9/16	-09	480	7000	350	5100	350	5100
1/2	3/4	-12	480	7000	350	5100	350	5100
5/8	7/8	-14	480	7000	280	4100	280	4100
3/4	1.1/16	-17	480	7000	280	4100	280	4100
7/8	1.3/16	-19	480	7000	280	4100		
1	1.5/16	-21	350	5100	280	4100		
1.1/4	1.5/8	-26	215	3100	170	2500		
1.1/2	1.7/8	-30	215	3100				
2	2.1/2	-38						

IMPORTANT NOTE REGARDING THREAD DASH SIZE/TUBE DASH SIZE

TUBE DASH SIZE – THREAD DASH SIZE

The RYCO Dash Size Part Numbering system for Connection Types associated with Inch sized tubing, follows the **THREAD** size rather than the **TUBE** size.

For example, for JIC 37° Flare; 9/16" **THREAD** is used with 3/8" OD **TUBE**.

The RYCO DASH SIZE for a JIC Hose Tail, 3/8" Hose to 3/8" Tube Size is therefore **-0609** (not -0606).

The Connection Types this applies to are as follows:

RYCO JSEAL™

JIC 37°

UNO (O Ring Boss)

ORFS (O Ring Face Seal)

SAE 45°

SAE Inverted Flare

BSP, NPT, JIS, Metric DIN, and SAE Flanges are not affected.

The tables below show the relationship between **TUBE Dash Size** and **THREAD Dash Size**.

RYCO JSEAL™, JIC 37° AND UNO (O RING BOSS)

TUBE OD HOSE ID	DASH SIZE		THREAD SIZE	
	TUBE/HOSE	THREAD		
1/8	-02	-05	5/16-24	UNF
3/16	-03	-06	3/8-24	UNF
1/4	-04	-07	7/16-20	UNF
5/16	-05	-08	1/2-20	UNF
3/8	-06	-09	9/16-18	UNF
1/2	-08	-12	3/4-16	UNF
5/8	-10	-14	7/8-14	UNF
3/4	-12	-17	1.1/16-12	UN
7/8	-14	-19	1.3/16-12	UN
1	-16	-21	1.5/16-12	UN
1.1/4	-20	-26	1.5/8-12	UN
1.1/2	-24	-30	1.7/8-12	UN
2	-32	-40	2.1/2-12	UN
2.1/2	-40	-48	3-12	UN

SAE 45°

TUBE OD HOSE ID	DASH SIZE		THREAD SIZE	
	TUBE/HOSE	THREAD		
1/8	-02	-05	5/16-24	
3/16	-03	-06	3/8-24	
1/4	-04	-07	7/16-20	
5/16	-05	-08	1/2-20	
3/8	-06	-10	5/8-18	
1/2	-08	-12	3/4-16	
5/8	-10	-14	7/8-14	
3/4	-12	-17	1.1/16-14	

SAE INVERTED FLARE

TUBE OD HOSE ID	DASH SIZE		THREAD SIZE	
	TUBE/HOSE	THREAD		
1/4	-04	-07	7/16-24	
5/16	-05	-08	1/2-20	
3/8	-06	-10	5/8-18	
7/16	-07	-11	11/16-18	

ORFS (O RING FACE SEAL)

TUBE OD HOSE ID	DASH SIZE		THREAD SIZE	
	TUBE/HOSE	THREAD		
1/4	-04	-09	9/16-18	UNF
3/8	-06	-11	11/16-16	UN
1/2	-08	-13	13/16-16	UN
5/8	-10	-16	1-14	UNS
3/4	-12	-19	1.3/16-12	UN
1	-16	-23	1.7/16-12	UN
1.1/4	-20	-27	1.11/16-12	UN
1.1/2	-24	-32	2-12	UN

RYCO CROCBITE, RKV, STAPLELOK & SUPERLOK

NOMINAL SIZE		DASH SIZE
DN	INCH	
6	1/4	-06
10	3/8	-10
12	1/2	-12
16	5/8	-16
19	3/4	-20
25	1	-25
31	1.1/4	-32
38	1.1/2	-40
51	2	-50
63	2.1/2	-63
76	3	-75

For RYCO CROCBITE, RKV, STAPLELOK and SUPERLOK, the Dash Size is the Nominal Size in millimetres.

TECHNICAL

THREAD AND CONNECTOR IDENTIFICATION

Selection of hydraulic connectors can be complex due to the large array of thread types that are commonly available. While some people become conversant with hydraulic connector standards through experience, others can become confused by the similarities between some connector types.

Correct identification of threads and connectors is of vital importance as the incorrect application of high pressure connectors presents an immediate safety risk.

In addition to comprehensive training services, RYCO also offer a range of tools and guides to assist in correctly identifying hydraulic threads and connectors, some of which are listed below.

To access current Thread and Connector Identification information refer to the relevant section in the current edition of the RYCO Product Technical Manual – Hydraulics and other related RYCO literature located at www.RYCO.com.au

THREAD ID KIT

POCKET GUIDE & IDENTIFICATION KIT

The RYCO Know How Thread ID Kit is to assist with identification of hydraulic threads and connectors. Correct identification is of vital importance, as the incorrect application of high pressure connectors presents an immediate safety risk.

Thread ID Kit Contents:

- Thread identification booklet
- Vernier caliper (digital or dial)
- Metric thread gauge
- Imperial thread gauge
- Pitch gauge 15 cm / 6 inch ruler

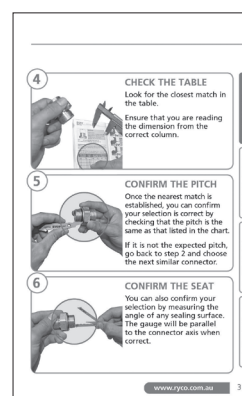
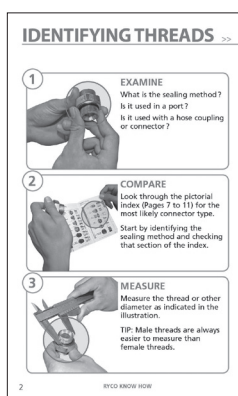
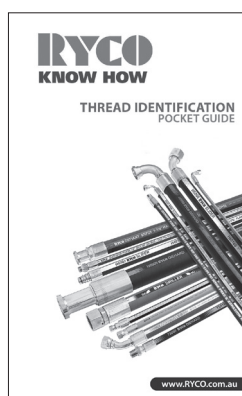
Part Numbers:

RYCO-MKT0250

Digital Vernier Caliper

RYCO-MKT0250D

Dial Vernier Caliper



THREAD ID MATE

THREAD IDENTIFICATION AT YOUR FINGERTIPS

RYCO offer the free Thread ID Mate smartphone app to aid thread identification.

The RYCO Thread ID Mate application enables you to identify hydraulic threads and connectors everywhere you go. The intuitive and simple identification process will help you find detailed information about threads specifications, sizes and more.

The Thread ID Mate app is available for your Android smartphone, iPhone/iPod Touch. Thread identification you can keep in your pocket!

Find out more at www.RYCO.com.au



CORROSION OF DISSIMILAR METALS

Corrosion of dissimilar metals (commonly referred to as galvanic corrosion or electrolytic corrosion) can occur when the metals are in electrical contact with each other, and the properties of the metals and environment are such that more active (sacrificial; anodic) metal is corroded.

All of the following must be present for galvanic corrosion to occur:

- There must be contact between the metals
- The electrical potential of the metals must be notably different
- A conductive liquid (electrolyte) must be in contact with the interface of the metals

When contacting metals and environment meet the above conditions, the more active metal will experience galvanic corrosion. The further apart two metal are on the chart below, the greater the chance of galvanic corrosion occurring.

Contact between two or more dissimilar metals in application can often be found, however the potential for galvanic corrosion has typically been considered and the potential effect reduced or eliminated.

Example:

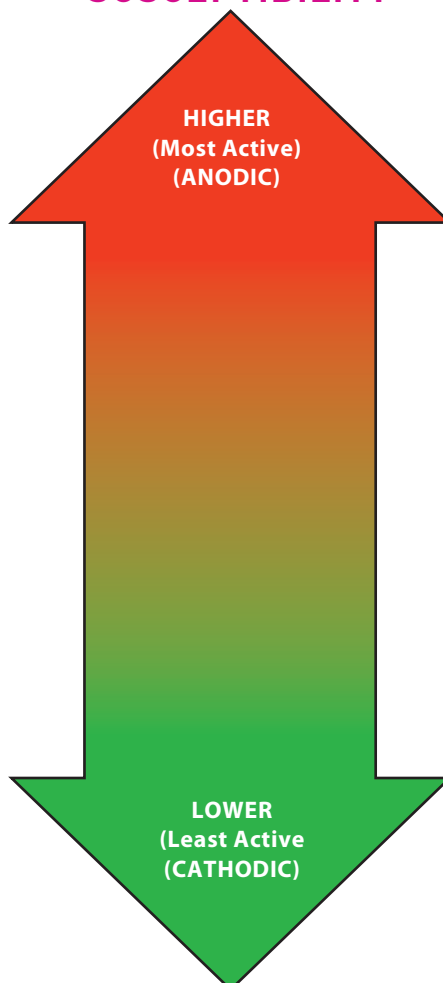
Stainless steels are less active than zinc and steel, therefore when subjected to contact with zinc-coated steel and the required conditions for galvanic corrosion to occur are met, the zinc will corrode first, then the steel. The galvanic corrosion action of the zinc and steel protects the stainless steel from galvanic corrosion during this period.

Note: Galvanic corrosion is influenced by various factors, including the metals in contact, local atmospheric conditions, and the conductive liquid/electrolyte properties, therefore this chart should be used as a guide only, and a more detailed analysis of the intended application should be considered, then performed if deemed necessary.

METAL

Magnesium
Magnesium Alloys
Zinc
Zinc-Nickel
Aluminium
Mild steels (e.g. 1020, 12L14)
Low Alloy Steels
Cast Iron
Stainless Steel 316 (active)
Stainless Steel 304 (active)
Inconel (active)
Lead
Tin
Nickel (active)
Brass
Copper
Copper-Nickel 90/10
Copper-Nickel 70/30
Nickel-Aluminium
Nickel (passive)
Silver
Monel 400
Stainless Steel 304 (passive)
Stainless Steel 316 (passive)
Inconel (passive)
Titanium
Carbon (Graphite)
Gold
Platinum

GALVANIC CORROSION SUSCEPTIBILITY



TECHNICAL

TORQUE ASSEMBLY VALUES

The Torque Values shown are for guidance only and are based on normal industrial applications. The Torque Values shown are for RYCO Stainless Steel fittings with appropriate lubricant applied.

Nm = NEWTON METRES

Kg.m = KILOGRAM METRES

ft.lbf = FOOT POUNDS FORCE

TO CONVERT	>>> INTO >>>	MULTIPLY BY
Nm	ft.lbf	0.737
Nm	kg.m	0.102
ft.lbf	Nm	1.357
ft.lbf	kg.m	0.138
kg.m	Nm	9.804
kg.m	ft.lbf	7.231

BSPP

BSPP SIZE	DASH SIZE	SWIVEL NUT		BSP ENCAPSULATED SEAL SAE RECOMMENDED TORQUE RANGE		BSP BONDED SEAL			
		TORQUE RANGE		TORQUE RANGE		RECOMMENDED TORQUE (SINGLE)		RECOMMENDED TORQUE (TANDEM SEALING)	
		Nm	ft.lbf	Nm	ft.lbf	Nm	ft.lbf	Nm	ft.lbf
1/8	-02	11-12	8-9	35-39	26-28	25-28	18-20	40-45	29-32
1/4	-04	25-28	18-20	60-66	44-49	51-55	37-40	67-72	49-52
3/8	-06	41-48	30-35	95-105	70-77	80-89	59-65	104-116	77-85
1/2	-08	72-82	55-60	130-143	96-105	99-105	73-77	119-126	88-93
5/8	-10	96-110	70-80	180-198	133-146	136-146	100-107	150-161	110-118
3/4	-12	124-137	90-100	200-220	147-162	220-230	162-169	242-253	179-186
1	-16	151-165	110-120	450-495	332-365	371-407	273-300	409-448	301-330
1.1/4	-20	192-206	140-150	500-550	369-405	501-510	369-376	527-536	388-395
1.1/2	-24	261-275	190-200	600-660	442-486	601-611	443-450	632-642	466-473
2	-32	343-357	250-260	700-770	516-567	746-756	550-557	784-794	578-585

*2" (-32) sizes of BSP Encapsulated Seal use an O-Ring seal.

METRIC

24°, 60° & UNIVERSAL INVERTED CONE					BONDED SEAL					
THREAD SIZE	TUBE DIA. S-HEAVY mm	TUBE DIA. L-LIGHT mm	SWIVEL NUT TORQUE RANGE		THREAD SIZE	DASH SIZE	RECOMMENDED TORQUE (SINGLE)		RECOMMENDED TORQUE (TANDEM SEALING)	
			Nm	ft.lbf			Nm	ft.lbf	Nm	ft.lbf
M12 x 1,5		6	10-20	7-15	M10	-10	53-59	39-43	85-95	63-69
M14 x 1,5	6	8	20-35	15-26	M12	-12	55-60	40-44	88-96	64-71
M16 x 1,5	8	10	25-40	18-30	M14	-14	72-79	53-58	101-111	75-82
M18 x 1,5	10	12	30-45	22-33	M16	-16	80-89	59-65	104-116	77-85
M20 x 1,5	12		35-50	26-37	M18	-18	82-90	60-66	107-117	78-86
M22 x 1,5	14	15	40-70	30-52	M20	-20	99-109	73-80	119-131	88-96
M24 x 1,5	16		40-70	30-52	M22	-22	136-150	100-110	157-173	115-127
M26 x 1,5		18	60-100	44-74	M24	-24	147-162	108-119	170-187	125-137
M30 x 2,0	20	22	80-120	59-89	M26	-26	171-182	126-134	189-201	139-148
M36 x 2,0	25	28	100-150	74-111	M27	-27	220-235	162-173	242-259	179-191
M42 x 2,0	30		150-220	111-163	M30	-30	270-287	199-211	297-316	219-233
M45 x 2,0		35	180-250	133-184	M33	-33	371-392	273-289	409-432	301-318
M52 x 2,0	38	42	200-300	148-221	M36	-36	390-398	287-293	429-438	316-323
					M42	-42	405-413	298-304	446-455	328-335
					M48	-48	501-510	369-376	552-561	406-414

RYCO JSEAL™, JIC 37° & SAE 45° (MACHINED OR FLARED)

RYCO JSEAL™, JIC/SAE THREAD SIZE	DASH SIZE	RYCO JSEAL™ RECOMMENDED TORQUE*		SAE RECOMMENDED JIC & SAE SWIVEL NUT TORQUE RANGE	
		Nm	ft.lbf	Nm	ft.lbf
5/16 - 24	-05			8-9	6-7
3/8 - 24	-06			11-12	8-9
7/16 - 20	-07	23	17	15-16	11-12
1/2 - 20	-08			19-21	14-15
9/16 - 18	-09	39	29	24-28	18-20
3/4 - 16	-12	77	57	49-53	36-39
7/8 - 14	-14	142	105	77-85	57-63
1.1/16 - 12	-17	198	146	107-119	79-88
1.3/16 - 12	-19	235	173	127-140	94-103
1.5/16 - 12	-21	263	194	147-154	108-113
1.5/8 - 12	-26	309	228	172-181	127-133
1.7/8 - 12	-30	386	285	215-226	158-167
2.1/2 - 12	-40	597	440	332-350	245-258

*Follow RYCO JSEAL™ Assembly Procedure.

SAE FLANGE CLAMP BOLTS CODE 61 & 62

BOLT DATA UN CLASS 2A (THREAD X LENGTH)	FLANGE DASH SIZE	SAE RECOMMENDED BOLT TORQUE RANGE	
		Nm	ft.lbf
CODE 61			
5/16 - 18 X 1.1/4	-08	20-25	15-18
3/8 - 16 X 1.1/4	-12	28-40	21-29
3/8 - 16 X 1.1/4	-16	37-48	27-35
7/16 - 14 X 1.1/2	-20	48-62	35-46
1/2 - 13 X 1.1/2	-24	62-79	46-58
1/2 - 13 X 1.1/2	-32	73-90	54-66
1/2 - 13 X 1.3/4	-40	107-124	79-91
5/8 - 11 x 1.3/4	-48	186-203	138-150
CODE 62			
5/16 - 18 X 1.1/4	-08	20-25	15-18
3/8 - 16 X 1.1/2	-12	34-45	25-33
7/16 - 14 X 1.3/4	-16	56-68	41-50
1/2 - 13 X 1.3/4	-20	85-102	63-75
5/8 - 11 X 2.1/4	-24	158-181	116-133
3/4 - 10 X 2.3/4	-32	271-294	200-217

UNO (O RING BOSS)

UNO THREAD SIZE	DASH SIZE	SAE RECOMMENDED STRAIGHT FITTING OR LOCK NUT TORQUE RANGE	
		Nm	ft.lbf
3/8 - 24	-06	11-13	8-10
7/16 - 20	-07	20-22	14-16
1/2 - 20	-08	24-27	18-20
9/16 - 18	-09	33-35	24-26
3/4 - 16	-12	68-78	50-60
7/8 - 14	-14	98-110	72-82
1.1/16 - 12	-17	170-183	125-135
1.3/16 - 12	-19	230-260	170-190
1.5/16 - 12	-21	270-300	200-220
1.5/8 - 12	-26	285-380	210-280
1.7/8 - 12	-30	370-490	270-360

ORFS

ORFS THREAD SIZE	DASH SIZE	SAE RECOMMENDED SWIVEL NUT TORQUE RANGE	
		Nm	ft.lbf
9/16 - 18	-09	14-16	10-12
11/16 - 16	-11	24-27	18-20
13/16 - 16	-13	43-47	32-35
1 - 14	-16	60-68	46-50
1.3/16 - 12	-19	90-95	65-70
1.7/16 - 12	-23	125-135	92-100
1.11/16 - 12	-27	170-190	125-140
2-12	-32	200-225	150-165

SAE FLANGE BLOCK BOLTS CODE 61 & 62

BOLT DATA UN CLASS 2B (THREAD X LENGTH)	FLANGE DASH SIZE	Nm	ft.lbf	RECOMMENDED BOLT TORQUE RANGE	
				Nm	ft.lbf
CODE 61					
5/16 - 18 X 1.1/4	-08			20-25	15-18
3/8 - 16 X 1.1/2	-12			28-40	21-29
3/8 - 16 X 1.1/2	-16			37-48	27-35
7/16 - 14 X 1.3/4	-20			48-62	35-46
1/2 - 13 X 1.3/4	-24			62-79	46-58
1/2 - 13 X 1.3/4	-32			73-90	54-66
CODE 62					
3/8 - 16 X 1.1/2	-12			34-45	25-33
7/16 - 14 X 1.3/4	-16			56-68	41-50
1/2 - 13 X 1.3/4	-20			85-102	63-75
5/8 - 11 X 2	-24			158-187	116-138
3/4 - 10 X 2.1/2	-32			271-294	200-217

These RTS are the terms and conditions of each of RYCO HYDRAULICS PTY LTD ABN No 96 085 527 724; RYCO 24.7 Pty Ltd ABN 97 054 946 173 and each is referred to, severally, as "RYCO".

1. Unless otherwise expressly agreed in writing, the products and services supplied by RYCO ("RPS") are supplied upon the following RTS to the exclusion of any (written or verbal) terms and conditions of the purchaser and no agent or representative of RYCO has any authority to vary or omit any of these terms in relation to a specific purchaser.
2. Before purchasing any RPS the purchaser:
 - a) agrees that they have read and understood these RTS, the safety information, notes, warnings and instructions contained in RYCO's current relevant catalogues, product technical manuals, manuals and published technical data ("Documents"); and
 - b) holds themselves as a responsible, competent and appropriately skilled user or reseller of RPS and that they comprehend and understand the dangers of incorrect use, installation or assembly of such products. Documents are available on the RYCO website www.ryco.com.au.
3. Each request for RPS (whether in writing or verbally) which sets out the quantity, price and a description of the RPS required, including a date and address for delivery (or, in the case of services, date for performance) ("Order") placed by the purchaser amounts to an offer by it to acquire from RYCO the RPS described in the Order upon these RTS. RYCO may, in its discretion, accept an offer by doing one of the following within 30 days after the date that RYCO receives the Order:
 - a) deliver the RPS (or perform the services) to the address for delivery set out in the Order; or
 - b) provide express written acceptance of the Order to the purchaser giving an estimated date for delivery.

Failure of RYCO to accept the order in accordance with this clause 3 will be a rejection of the Order.
4. Each Order that is accepted by RYCO under clause 3 constitutes a separate contract between RYCO and the purchaser which the parties agree is governed by these RTS.
5. RYCO may, in its discretion, refuse to sell or supply RPS to the purchaser, and may, but is not obliged to, give written notice to that effect. RYCO is not required to give reasons for its refusal.
6. Any Order, including any order for special production runs under clause 17, that has been accepted by RYCO may not be reduced or cancelled by the purchaser after acceptance without the agreement of RYCO in writing.
7. The purchaser agrees that all RPS it orders are for the purposes of business and the purpose of re-supply or transforming them in the process of trade or commerce, and not for personal, domestic or household use or consumption, and that the Australian Consumer Law does not apply to the supply of RPS to the purchaser to the extent permitted by that Act. The purchaser acknowledges and agrees that RYCO relies upon this representation in agreeing to deliver or provide the RPS.
8. All products supplied by RYCO must be examined by the purchaser at the time of delivery and any deficiency in quantity or quality of or damage to product delivered ("Defect") must be notified to RYCO within 5 business days of the date of delivery to the purchaser. If the purchaser does not provide such notification to RYCO then this shall be deemed to be an acknowledgment by the purchaser that the:
 - a) quantities as set out by the invoice are correct; and
 - b) products are of an acceptable quality; and
 - c) the products are not damaged and will not be returned.
9. Subject to clauses 11 and 13 below, RYCO warrants to the purchaser that the RPS will be of an acceptable quality on delivery and for twelve months from issue of invoice by RYCO ("Warranty"). The purchaser agrees that it will not provide any express warranty in respect of the RPS to any customer other than the Warranty as provided here, and releases and indemnifies RYCO from any liability for any representation made by the purchaser to a customer that exceeds the Warranty. RYCO will not provide any warranty whatsoever on items manufactured, built or acquired wholly or partially to the purchaser's designs or specifications.
10. If the purchaser provides notification of a Defect to RYCO pursuant to clause 8 and lodges a Warranty claim in relation to RPS, RYCO's liability will be limited as set out in clause 13.
11. To the extent permitted by law, RYCO will not be liable for a breach of the Warranty set out in clause 9 for any of the following:
 - a) the purchaser not providing notification to RYCO pursuant to clause 8;
 - b) the purchaser or the user of the RPS has not used the RPS in accordance with the instructions or specifications set out in the Documents;
 - c) use of the RPS that is contrary to the instructions contained in RYCO's Documents, as this may result in an unsatisfactory or even dangerous product;
 - d) defects caused by normal or accelerated deterioration; physical, chemical, electrochemical or environmental conditions; insufficient maintenance or incorrect repair; failure to follow correct storage, user and operating instructions; use of unsuitable materials;
 - e) products that have been incorrectly assembled in accordance with the assembly operations specified in RYCO's Documents;
 - f) the modification of RPS, other than in accordance with RYCO's written approval;
 - g) the performance of any RPS that are welded (except if the welding is carried out by RYCO, its servants or its agents) by a person who is not suitably qualified including, but not limited to, welders, salvage, life saver or any other components. These welded products should be tested and proved fit for the use intended; and
 - h) the claimant does not extend to RYCO a reasonable opportunity to fully inspect the product, the subject of the claim and the circumstances giving rise to the claim.
12. Subject to clause 9 and except as conferred by law, no express warranty or guarantee is given with respect to any of the characteristics or quality of RPS supplied.
13. Where any law or statute implies in these RTS, any term, condition or warranty and that Act, law or statute avoids or prohibits a contract excluding or modifying the application of or exercise of or liability under such term, condition or warranty, such term, condition or warranty will be deemed to be included in these RTS. The liability of RYCO to the purchaser for any breach of such term, condition or warranty, or any breach of the Warranty will be limited, at the option of RYCO, to:
 - a) if the breach relates to goods:
 - i) the replacement of the goods or the supply of the equivalent goods;
 - ii) repair of the goods
 - iii) the payment of the cost of replacing the goods or of acquiring equivalent goods or having the goods repaired; or
 - b) if the breach relates to services:
 - i) the resupply of the services (or part of them); or
 - ii) the payment of the cost of having the services supplied again.
14. RYCO sets out, in its Documents and other product material, suggestions as to the use, installation and care of its products on the understanding that those suggestions are made solely to assist the purchaser to obtain the best results from their purchase and those suggestions do not constitute warranties or otherwise add to or vary these terms in any way.
15. Unless otherwise stated to the contrary by the purchaser on a written Order, RYCO will supply products on the understanding that they will be used in hydraulic applications with mineral oil within the limits shown in RYCO's current Documents.
16. RYCO will use its best endeavours to deliver at the time stated in the Order, but all delivery dates shall be regarded as estimates only. The purchaser must accept the actual delivery date and RYCO shall not be liable for any losses, costs, damages or expenses suffered by the purchaser or any other party as a result of any delay in delivery.

17. Where Orders are accepted by RYCO for special production runs, unless otherwise agreed to in writing, RYCO reserves the right to make delivery and charge for plus or minus 20 units or 15% of the order quantity, whichever is greater. RYCO will not accept any restriction of its right to manufacture or sell or offer to any other purchaser products which may have been manufactured specially for a specific purchaser or purchasers.
18. Payment is to be made in cash, cheque or by direct debit within 30 days of invoice date. If:
 - a) the purchaser fails to make any payments that are due to RYCO on or before the due date stipulated in the invoice, under this or any other contract, RYCO may delay, suspend or cancel deliveries in whole or in part at its sole discretion;
 - b) the payment is not made within these RTS, interest will be calculated and charged at the interest rate fixed from time to time in section 2 of the Penalty Interest Rates Act 1983 (Vic) plus an additional 2% per month, and will be charged monthly and accrue from the date of invoice until all overdue amounts are paid in full; and
 - c) any amount becomes overdue, all amounts recorded on the purchaser's account will be deemed to be immediately due and payable. The purchaser agrees to pay all costs and expenses incurred by RYCO, its agents and its servants in the recovery of the overdue amounts, including but not limited to all legal costs, debt recovery costs and debt recovery agency costs.
19. The RPS remain the property of RYCO and title in the RPS only passes from RYCO to the purchaser once RYCO has received all amounts due to it from the purchaser for those RPS. Risk in the RPS passes to the purchaser when the RPS leave RYCO's premises for delivery to the purchaser and the purchaser must indemnify RYCO against any loss to the RPS occurring after delivery. The purchaser must store the RPS separately from any other goods of its own or other suppliers and in a way that enables the RPS to be clearly identifiable as RYCO's. While RYCO retains title to the RPS, the purchaser holds the RPS as RYCO's fiduciary and the purchaser is authorised to sell the RPS as RYCO's agent and fiduciary and the proceeds of any sale of RPS or insurance claim regarding RPS must be held on trust for RYCO until title to the RPS passes to the purchaser. The parties acknowledge that under this arrangement, when the purchaser receives the RPS the purchaser is deemed to grant RYCO a security interest (as that term is defined in section 12 of the Personal Property Securities Act 2009) (PPSA) in the RPS securing the purchaser's obligation to return the goods to RYCO or pay the purchase price.
20. At any time after the due date for payment of any account owing from the purchaser to RYCO, or if the purchaser is subject to an insolvency event (ie in relation to a body corporate, a winding up, the appointment of a voluntary administrator, receiver, manager or similar insolvency administrator to a party or any substantial part of its assets, or in relation to an individual, becoming bankrupt or entering into a scheme or arrangement with creditors or, in relation to a body corporate or an individual, the occurrence of any event that has a substantially similar effect to any of the above events) and has not paid any outstanding amount owing to RYCO, and so long as such amounts have not been received by RYCO in full, RYCO at the purchaser's expense, may recover possession of these, or any other RPS that RYCO has previously delivered to the purchaser which are of an equivalent value. If this occurs, the purchaser grants a licence to RYCO to enter any premises where such RPS are situated to search for, inspect and/or repossess such RPS. RYCO has the right to resell any RPS repossessed and is not liable to the purchaser or any person claiming through the purchaser arising from any repossession of RPS (or any other act or omission by RYCO or its agents engaged in by RYCO or them pursuant to the licence granted under this clause).
21. The purchaser acknowledges and agrees that these RTS constitute a Security Agreement which creates a Security Interest (a Purchase Money Security Interest) under the PPSA in favour of RYCO. RYCO holds a Security Interest in all RPS previously supplied by RYCO to the purchaser, and will hold a Security Interest in all after acquired RPS supplied on the terms set out in clauses 19 and 20, notwithstanding anything express or implied to the contrary contained in the purchaser's purchase order.

The purchaser agrees:

 - a) that RYCO may effect a registration of its Security Interest on the Personal Properties Securities Register (PPSR) at its sole discretion;
 - b) to provide RYCO with all information (which information the purchaser warrants to be complete, accurate and up to date in all respects) and execute any document or do anything that RYCO may reasonably require to enable perfection of its Security Interest or registration of a Financing Statement or Financing Change Statement on the PPSR;
 - c) not to register a Financing Change Statement or an amendment demand without the prior written consent of RYCO;
 - d) to provide to RYCO not less than fourteen days prior written notice of any proposed change in the purchaser's name or any other change in its details (including but not limited to change in the address, facsimile, email, trading name or business practice);
 - e) if requested by RYCO, and to the extent permissible under the PPSA, pay all reasonable costs incurred by RYCO to register a Financing Statement and to maintain up-to-date registration of its Security Interest on the PPSR;
 - f) reimburse RYCO the full cost incurred by RYCO (including legal costs and disbursements on an indemnity basis) in obtaining an order pursuant to section 182 of the PPSA;
 - g) as between the purchaser and RYCO, where RYCO has rights under this Agreement in addition to those in Chapter 4 of the PPSA, those rights will continue to apply and will not be limited by s125 of the PPSA;
 - h) to the extent permitted by law, to waive any rights that the purchaser may have to:
 - (i) receive notice of removal of an accession under section 95 of the PPSA, and not to have the RPS damaged when RYCO removes the accession;
 - (ii) reinstatement of the security agreement pursuant to s143 of the PPSA;
 - (iii) receive any notice required under the PPSA, including but not limited to a notice of retention or a notice of disposal or a statement of account on enforcement of the Security Interest in accordance with s115 of the PPSA;
 - (iv) receive a Verification Statement in respect of any Financing Statement relating to the Security Interest pursuant to section 157 of the PPSA,

For the purposes of this clause 21, capitalised terms have the meaning of those terms in the PPSA.
22. RYCO will not be liable for breach of contract arising from or caused by, directly or indirectly, fire, flood, earthquake, storm or tempest; the action of any government or any public authority or corporation; the lack of labour, supplies or equipment, from whatever cause; or any other cause beyond RYCO's control.
23. This contract shall be governed by and construed by the laws of the State of Victoria, Australia.
24. If any of these RTS or any part thereof is held by a court to be void or unenforceable such provision shall be read down to such extent as may be necessary to ensure that it does not so infringe and as may be reasonable in all circumstance so as to give it valid operation of a partial character and in the event that the infringing condition cannot be so read down it will be severed from the other provisions.
25. RYCO may amend these RTS from time to time, but those amendments will not take effect until RYCO has notified the purchaser in writing of those amendments. The applicable version will be those RTS attached to or forming part of the relevant Order and will take precedence over any earlier version contained in the Documents.
26. RYCO may cancel these RTS at any time by giving written notice to the purchaser of the cancellation. RYCO will supply any Order that has been accepted by it (under clause 3) on or before the date of that cancellation notice.
27. RPS are designed for use in static equipment, mobile ground vehicles, mobile ground equipment and marine applications. RPS are not designed for use in flight applications. RYCO does not recommend use of its products on aircraft and has no liability to the purchaser if the purchaser supplies the goods to consumers for use on aircraft.
28. The purchaser may not assign, transfer or otherwise dispose of any of the rights or obligations of this or any other contract with RYCO that is subject to these RTS without the prior written consent of RYCO.

ABBREVIATIONS

A/F	Across Flats	ELB	Elbow	NB	Testing Authorities (Aus.)
ABS, Abs.	Absolute	EPDM	Ethylene Propylene Diene Monomer	NCB	Nominal Bore
ABS	American Bureau of Shipping	EXT	Extended	NCS	National Coal Board
AC	Air Conditioning	F, FEM	Female	NFPA	NATA Certification Services
AFNOR	Association Française de Normalisation (French Standardisation Organisation)	FF	Female Fixed		National Fluid Power Association (USA)
AGA	Australian Gas Association	FIX	Fixed	Nm	Newton Metre
API	American Petroleum Institute	FLNG	Flange	NOM, Nom.	Nominal
AS	Australian Standard	FOS	Factor Of Safety	NPS	National Pipe Straight Thread
AV	Average	FS	Female Swivel	NPSM	National Pipe Straight Mechanical
BCS	British Coal Standard	ft	Foot	NPSMFS	National Pipe Straight Mechanical Female Swivel
BH	Bulkhead	ft.lbf	Foot Pound force	NPT	National Pipe Taper Thread
BP	Burst Pressure	g	Gram	NPTF	National Pipe Taper for Fuel
BS	British Standard	GL	Germanischer Lloyd	NPTFF	National Pipe Taper Female Fixed
BSP	British Standard Pipe	GPM	Gallons Per Minute	NPTM	National Pipe Taper Male
BSPP	British Standard Pipe Parallel Thread	HP	High Pressure	OA, O/A	Overall
BSPPFS	British Standard Pipe Parallel Female Swivel	hp	Horse Power	OD	Outside Diameter
BSPPMBH	British Standard Pipe Parallel Male Bulkhead	HTS	High Tensile Steel	ORFS	O Ring Face Seal
BSPPOM	British Standard Pipe Parallel O Ring Male	HW	Heavy Wall	ORFSFS	ORFS Female Swivel
BSPPOM EXT	British Standard Pipe Parallel O Ring Male Extended	ID	Inside Diameter	ORFSM	ORFS Male
BSPT	British Standard Pipe Taper Thread	inHg	Inches of Mercury	PCD	Pitch Circle Diameter
BSPTFF	British Standard Pipe Taper Female Fixed	IMP	Imperial	PCV	Positive Crankcase Ventilation
BSPTM	British Standard Pipe Taper Male	INV	Inverted	P/N, P/NO	Part Number
BSW	British Standard Whitworth	ISO	International Organization for Standardization	PREV	Previous
C/W	Complete With	JIC	Joint Industries Council (Thread UN)	psi	Pounds per Square Inch
CA	Cut-off Allowance	JICFS	JIC Female Swivel	PTFE	Polytetrafluoroethylene
CAT	Caterpillar®	JICM	JIC Male	PW	Pressure Washer
CL, C/L	Cut Length	JICMBH	JIC Male Bulkhead	QA	Quality Assurance
CrVI	Chromium 6	JICMEXT	JIC Male Extended	QC	Quality Control
cSt	Centistoke	JIS	Japanese Industrial Standard	QRC	Quick Release Coupling
DIA, DIAM	Diameter	kg	Kilogram	RED	Reducing
DIN	Deutsche Industrie Normen (German Industrial Standard)	kg.m	Kilogram Metres	RMA	Rubber Manufacturers Association
DKL	Dicht Kegel Leicht (Metric Light Series 24° Cone)	kPa	KiloPascal	RPM	Revolutions Per Minute
DKM	Dicht Kegel Metric (Metric 60° Cone)	kW	Kilowatt	RQP	RYCO Quality Product
DKO	Dicht Kegel O Ring (Metric O Ring Seal 24° Cone)	LNG	Long	SAE	Society of Automotive Engineers (USA)
DKOL	Dicht Kegel O Ring Leicht (Metric Light O Ring Series 24° Cone)	L	Litre	SAEFS	SAE Female Swivel
DKOS	Dicht Kegel O Ring Schwer (Metric Heavy O Ring Series 24° Cone)	lb	Pound	SAEM	SAE Male
DKS	Dicht Kegel Schwer (Metric Heavy Series 24° Cone)	LP	Low Pressure	SF	Swivel Female (Union)
DL	Drop Length	LPG	Liquified Petroleum Gas	SS	Stainless Steel
DN	Diameter Nominal (mm)	LPM	Litres Per Minute	STD	Standard
DNV	Det Norske Veritas	LR	Lloyd's Register	STPL	Staple
DoT	Department of Transportation (USA)	M	Male	SWIV	Swivel
EEC	Evaporative Emission Control	m	Metre	T/NESS	Thickness
		MAX	Maximum	TBA	To Be Advised
		MBP	Minimum Burst Pressure	THRD	Thread
		MED	Marine Equipment Directive	TP	Test Pressure
		MFL	Minimum Free Length	TPI	Threads Per Inch
		MIC, Mic.	Micron (µm)	TW	Tube Weld
		MIL	Military Specification (USA)	UN	Unified National Thread
		MIN	Minimum	UNO	UN O Ring (O Ring Boss)
		mm	Millimetre	UNOM	UNO Male (O Ring Boss Male)
		mmHg	Millimetres of Mercury	UNOMEXT	UNO Male Extended (O Ring Boss Male Extended)
		MPa	MegaPascal	USCG	United States Coast Guard
		MSHA	USA Department of Labor, Mine Safety and Health Administration.	WP	Working Pressure
		MWP	Maximum Working Pressure	°C	Degrees Celcius
		NA, N/A	Not Applicable	°F	Degrees Farenheit
		NAHAD	National Association of Hose and Accessories Distributors (USA)	β	Beta (filtration)
		NATA	National Association of	mm	Micron

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