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NATO POLLUTANT DISCHARGE CONNECTION FOR SEWAGE AND FOR OILY WATER

Edition A Version 1
MAY 2019

NORTH ATLANTIC TREATY ORGANIZATION

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

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NATO LETTER OF PROMULGATION

10 May 2019

1. The enclosed Allied Maritime Environmental Protection Publication Allied Naval Engineering Publication ANEP-94, Edition A, Version 1, NATO POLLUTANT DISCHARGE CONNECTION FOR SEWAGE AND FOR OILY WATER, which has been approved by the nations in the NATO NAVAL ARMAMENTS GROUP, is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 4167.

2. ANEP-94, Edition A, Version 1, is effective upon receipt.

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4. This publication shall be handled in accordance with C-M(2002)60.

Zoltán GULYÁS
Brigadier General, HUNAF
Director, NATO Standardization Office

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS

Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.

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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]
FRA	France does not use the connections described in chapters 2.1.2.b. and 2.2.2.a. and b. as well as in annexes A (except for figure A 1), B, C (except for figure C 1) and D.
GRC	Installation date for shore based installations will be determined at a later date.
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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CHAPTER 1 INTRODUCTION

1.1. BACKGROUND

NATO Navy ships have a variety of shipboard waste water collection, storage, and processing systems and equipment. The requirements for these systems are driven by national laws and regulations. Although the shipboard systems may differ, common connection fittings are required in order to offload liquid waste including sewage and oily water to shore facilities or auxiliary craft in NATO Navy ports.

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CHAPTER 2 SHIP TO SHORE CONNECTION FITTINGS FOR SEWAGE AND OILY WATER

2.1. SEWAGE CONNECTIONS

1. All ships fitted with sewage handling systems shall be capable of discharging sewage via one or more deck connection that is/are compatible with:

   a. the International Maritime Organization (IMO) sewage flanged fitting or

   b. the NATO quick-disconnect sewage coupling, which must be adaptable to the IMO sewage fitting flange.

The details will be found in Annexes A and B for IMO and NATO respectively.

2. NATO Navy ports with sewage reception facilities will provide the necessary hoses equipped with the following fittings for connection to the ship's sewage discharge system:

   a. the IMO sewage flange fitting and

   b. the NATO quick-disconnect sewage coupling.

Details for these fittings will be found in Annexes A and B for IMO and NATO respectively.

2.2. OILY WATER CONNECTIONS

1. All ships fitted with oily water handling systems shall be capable of discharging oily water via one or more oily water deck connection that is/are compatible with:

   a. the IMO oily water flanged fitting or

   b. the NATO quick-disconnect oily water coupling, which must be adaptable to the IMO oily water fitting flange.

* Oily Water: Any oily waste from bilges or from oil water separator discharges.

The details for these fittings will be found in Annexes C and D for IMO and NATO respectively.

2. NATO Navy ports with oily water reception facilities will provide the necessary hoses equipped with the following fittings for connection to the ship's oily water discharge system:

a. the IMO oily water flanged fitting and

b. the NATO quick-disconnect oily water coupling.

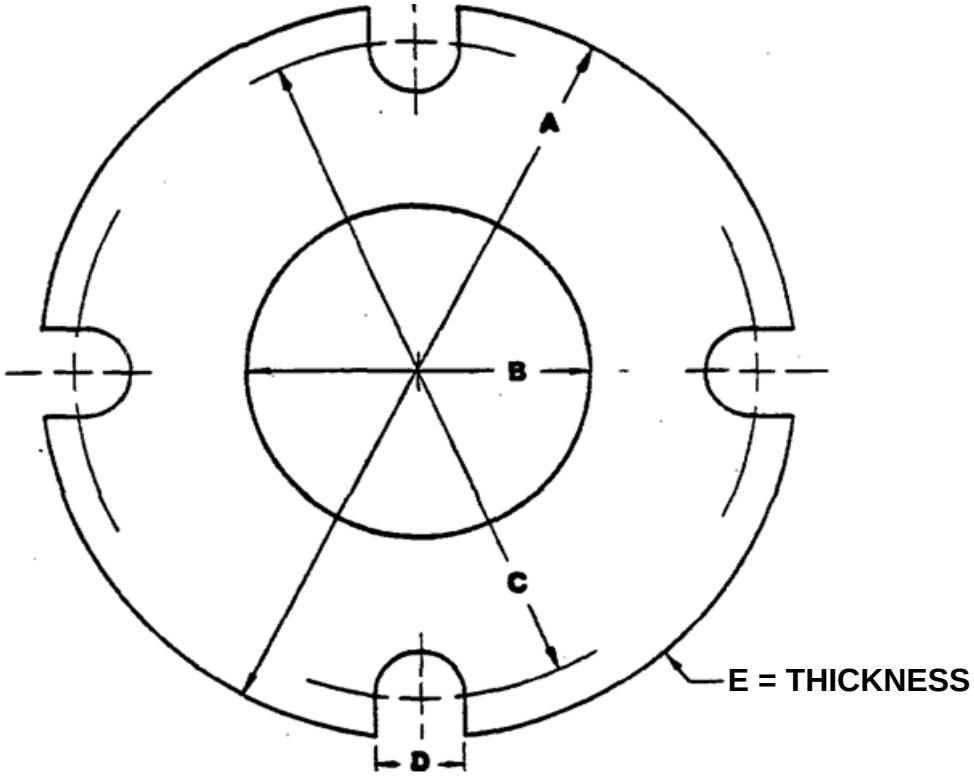
Details will be found in Annexes C and D for IMO and NATO respectively.

ANNEX A IMO SEWAGE FLANGED FITTING

A.1. DESCRIPTION

1. The flanged fitting described in Table A-l is the IMO standard fitting for the transfer of sewage from ships. This flange connects to a similar flange at the receiving facility.

The connection is bolted and requires a gasket for a leak free connection.
Table A-2 describes the use for the IMO flange as an adapter.



DIMENSIONS mm

A	B	C	D	E
210	(a)	170	18	16

(a) Inside diameter as required, but not exceeding 100mm.

Slots Required: 4 slots, equidistant on bolt circle, 16mm bolts and nuts.

TABLE A-1 IMO Flange, Sewage

100mm COUPLING

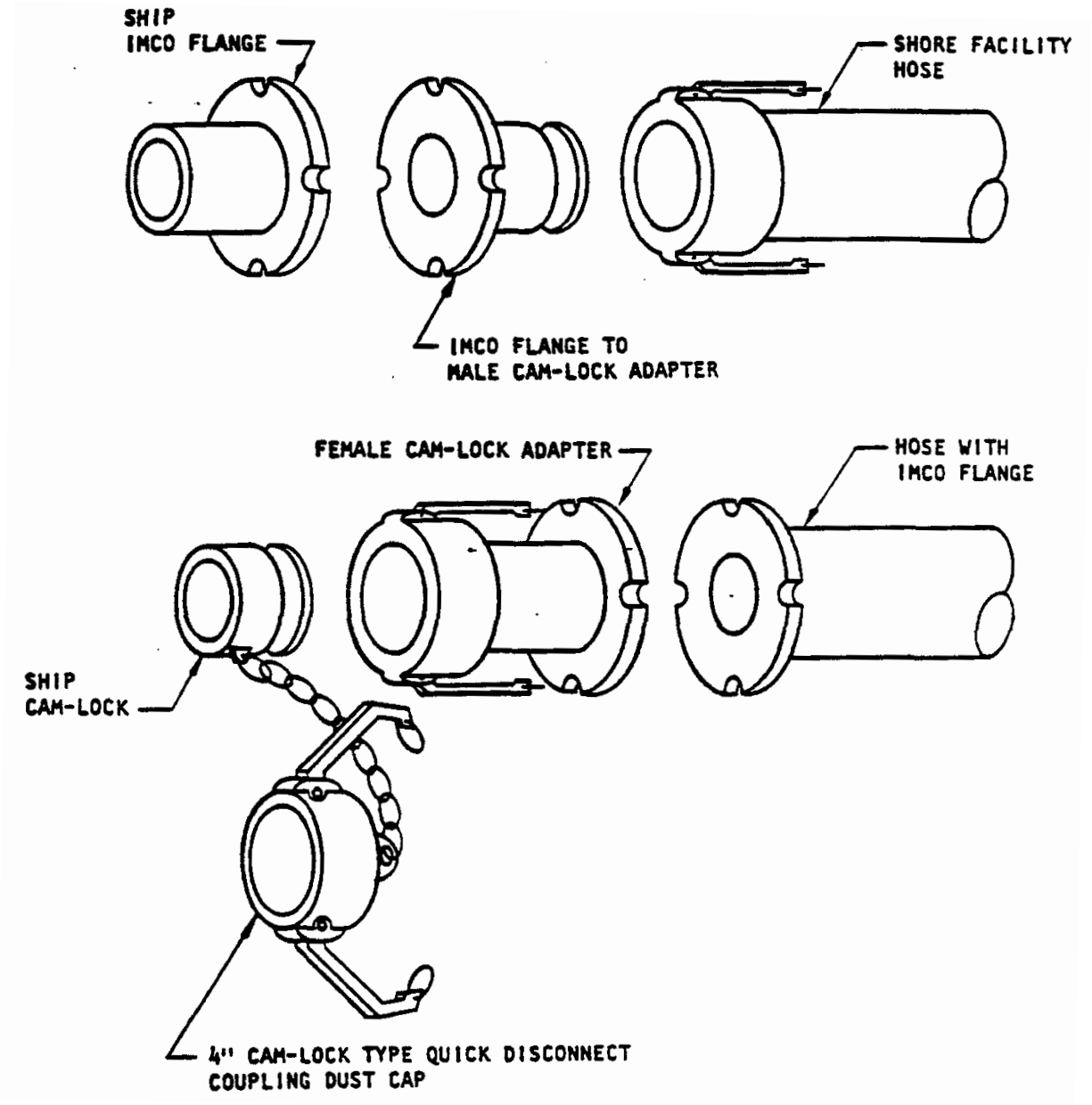


TABLE A-2 IMO Flange, Sewage; Example of Use

ANNEX B NATO QUICK-DISCONNECT SEWAGE COUPLING

DESCRIPTION

1. The fitting described in Tables B-1 through B-7 is the NATO standard fitting for the transfer of sewage from ships. This fitting is a quick-disconnect cam-locking coupling which requires the male and female coupling halves to be dimensionally compatible. The critical mating dimensions are described in Tables B-1 and B-2. The manufacturing specifications for this fitting are governed by Commercial Item Description (CID) A-A-59326 except that non-mating dimensions, threads, hose shank diameters, and flanges can be specified for local requirements. Materials for fittings shall be of noncorrosive materials.

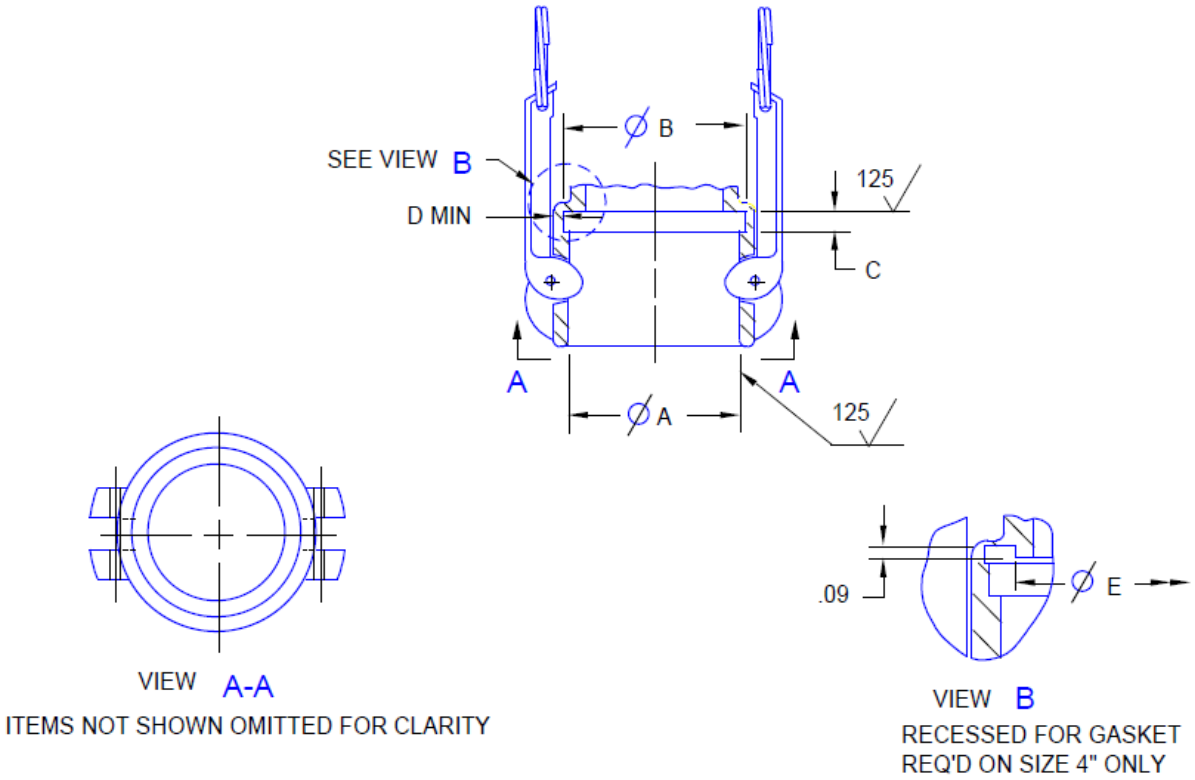
The following Tables provide designs of adapters.

TABLE	TITLE
B-1	Quick-Disconnect Coupling, Female Half, Sewage
B-2.	Quick-Disconnect Coupling, Male Half, Sewage
B-3	Coupling Half Quick-Disconnect, Cam-Locking Type, Male, Internal Threads
B-4	Coupling Half Quick-Disconnect, cam-Locking Type, Female, Internal Threads
B-5	Coupling Half Quick-Disconnect, Cam-Locking Type, Male, Flanged
B-6	Coupling Half Quick-Disconnect, cam-Locking Type, Male, Hose Shank
B-7	Coupling Ralf Quick-Disconnect, Cam-Locking Type, Female, Hose Shank

2. Dimensions are indicated in inches for critical surfaces to insure compatibility with CID A-A-59326. Nominal dimensions of fittings are given in inches and millimetres.

Related Documents

a. CID A-A-59326D
b. STANAG 3328 (AAP-9) - NATO Standard Conversion Tables for Metric, American and British Units.
c. STANAG 3784 PHE - Technical Guidance for the Design and construction of POL installations on NATO Airfields.
d. STANAG 3756 PHE - Equipment for Receipt and Delivery of Liquid Fuels.

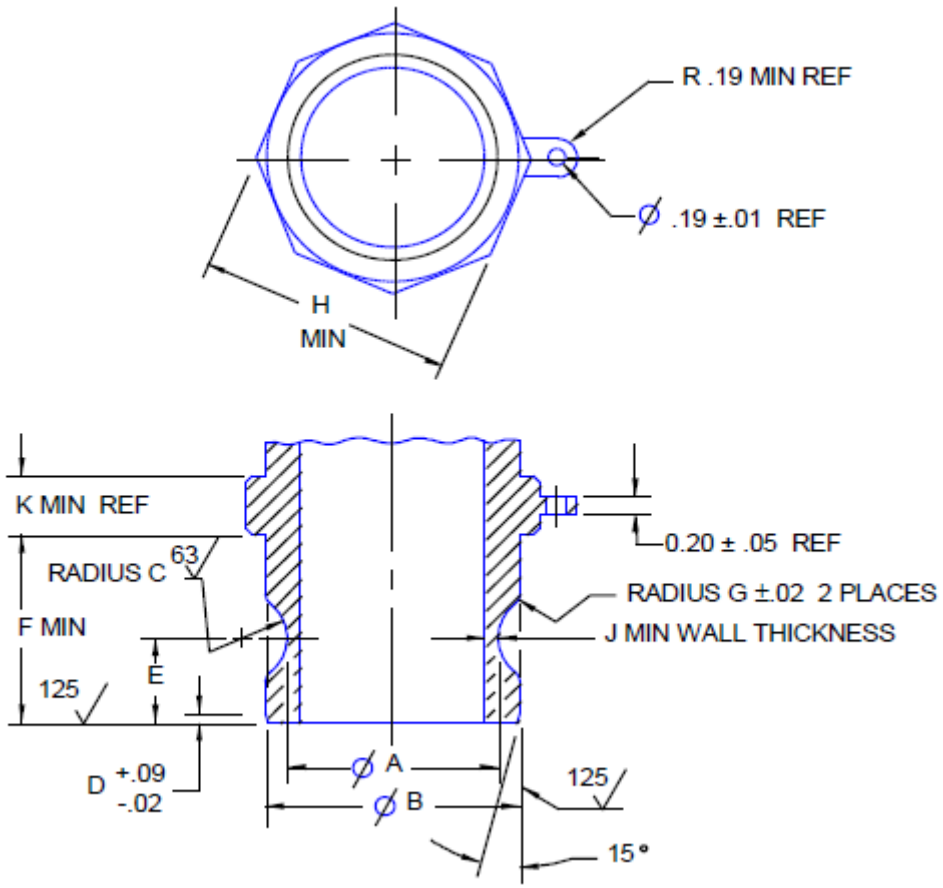


NOMINAL SIZE		DIMENSIONS				
inch	mm	inch				
		A	B	C	D	E
4	100	4.734	4.94	.28	.219	3.906

NOTES:

1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure : 300 psi. (20 bar)
6. Working pressure : 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance - ± .02 for two place decimals, ± .05 for three place decimals, angles ± 1° unless otherwise specified hereon

TABLE B-1 Quick-Disconnect Coupling, Female Half, Sewage

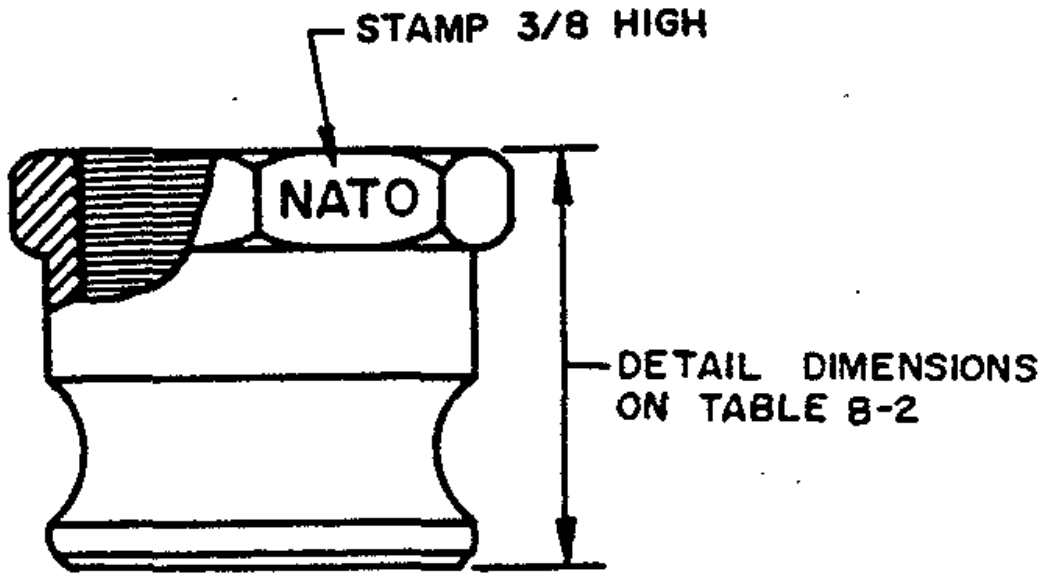


NOMINAL SIZE		DIMENSIONS									
inch	mm	inch									
		A	B	C	D	E	F	G	H	J	K
4	100	4.307 4.302	4.708 4.703	.503 .497	0.22	.895 .889	2.07	0.12	4.708 4.703	.22	1.00

NOTES:

1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure : 300 psi. (20 bar)
6. Working pressure : 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance - ± .02 for two place decimals, ± .05 for three place decimals, angles ± 2° unless otherwise specified hereon

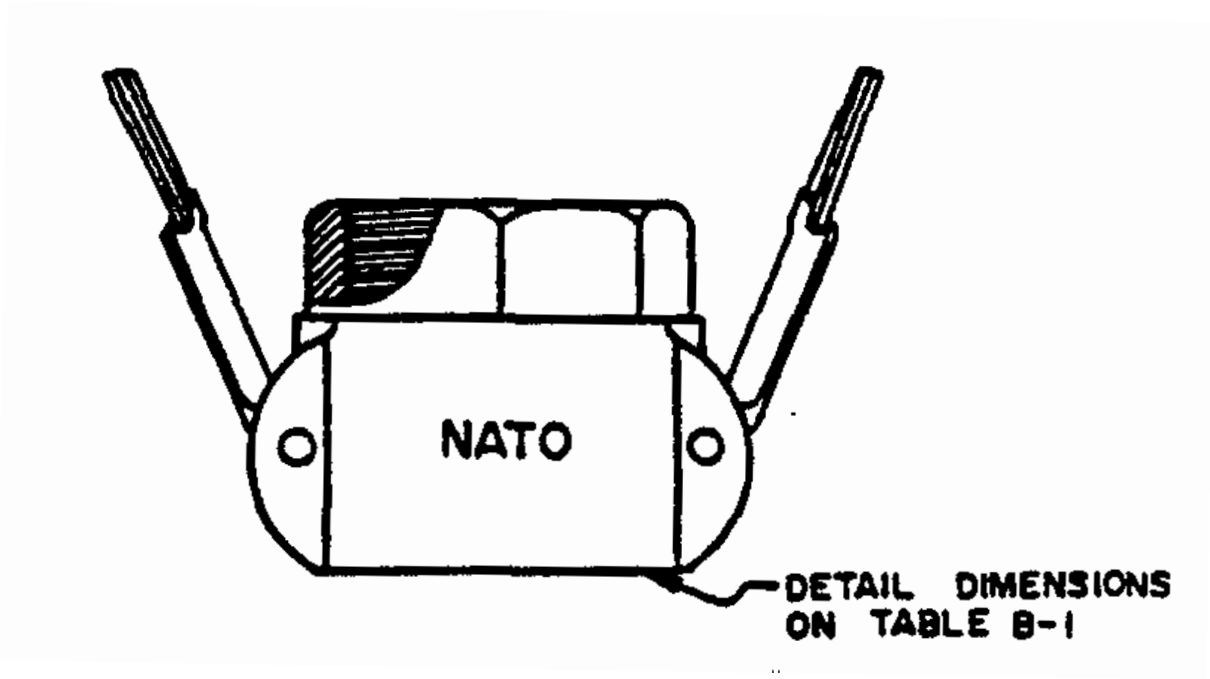
TABLE B-2 Quick-Disconnect Coupling, Male Half, Sewage



NOTES;

1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure : 300 psi. (20 bar)
6. Working pressure : 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance - ± .02 for two place decimals, ± .05 for three place decimals, angles ± 2° unless otherwise specified hereon

TABLE B-3 Coupling Half Quick-Disconnect
Cam-Locking, Male; Internal Thread, Sewage

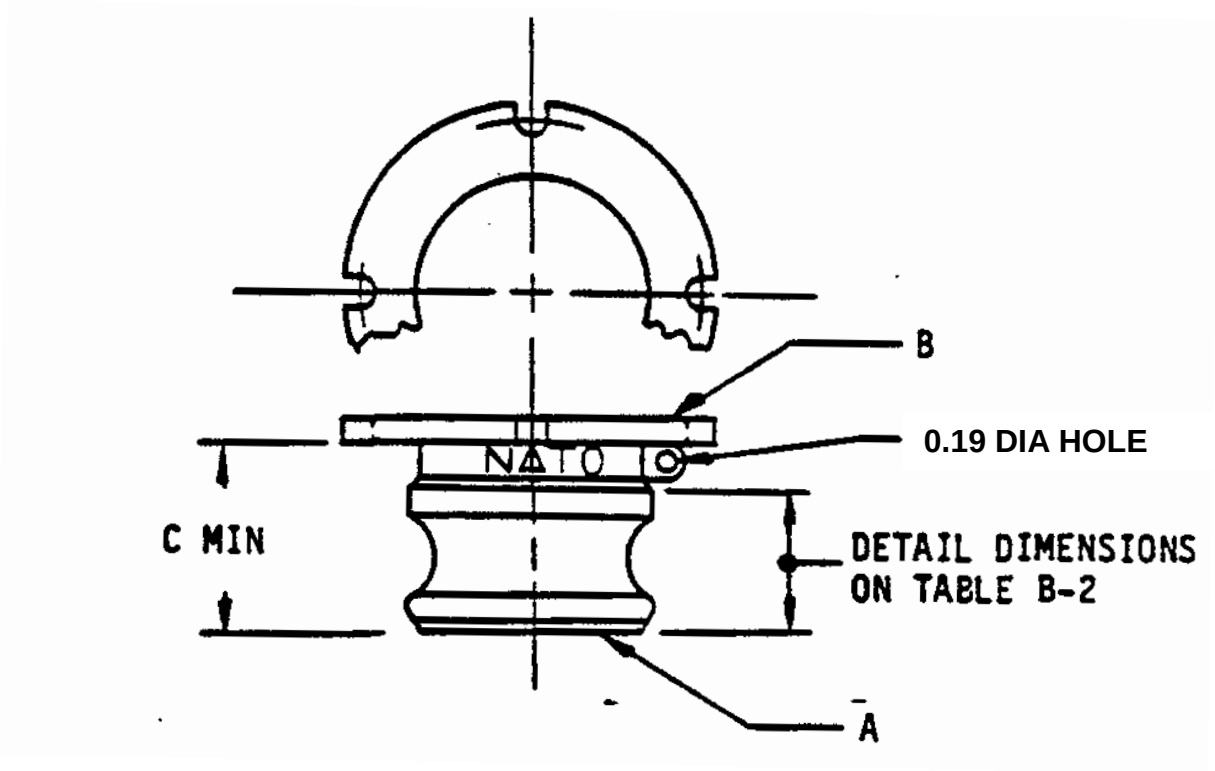


NOMINAL SIZE		GASKET REQUIRED
inch	mm	
4	100	CID A-A-59326D-9

NOTES:

1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure : 300 psi. (20 bar)
6. Working pressure : 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance - ± .02 for two place decimals, ± .05 for three place decimals, angles ± 1° unless otherwise specified hereon

TABLE B-4 Coupling Half Quick-Disconnect Cam-Locking, Female Internal Threads, Sewage

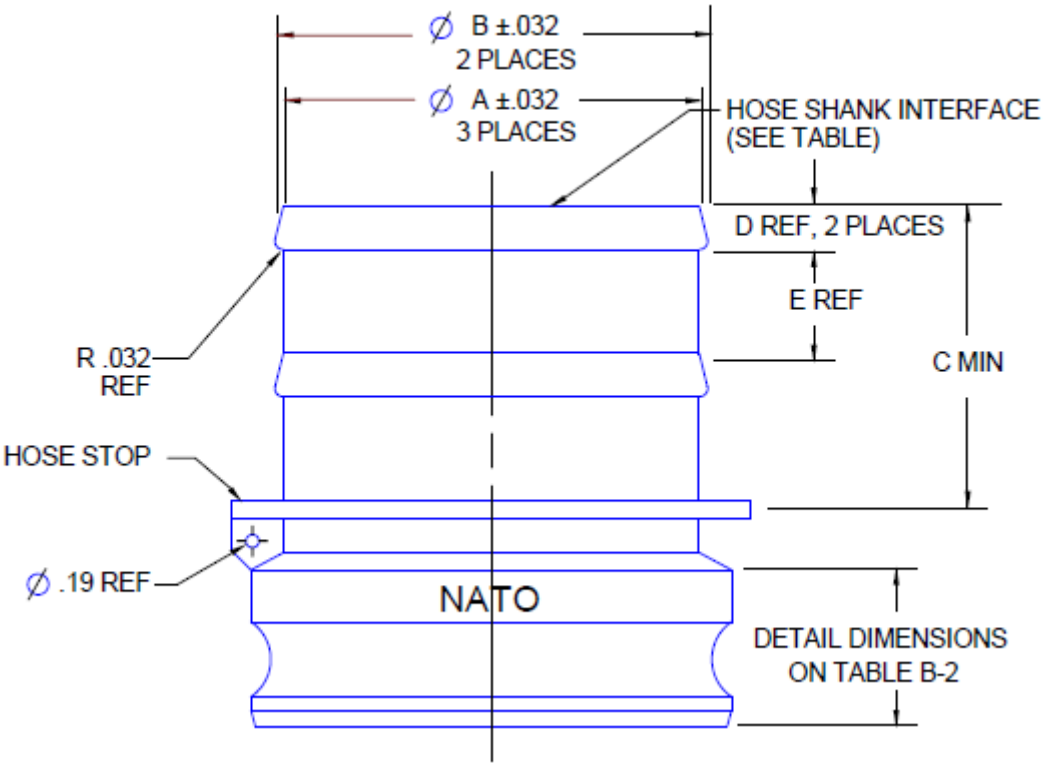


NOMINAL SIZE		DIMENSION
inch	mm	C
4	100	2.875

NOTES:

1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure : 300 psi. (20 bar)
6. Working pressure : 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance - ± .02 for two place decimals, ± .05 for three place decimals, angles ± 2° unless otherwise specified hereon

TABLE B-5 Coupling Half Quick-Disconnect Cam-Locking, Male Flanged, Sewage

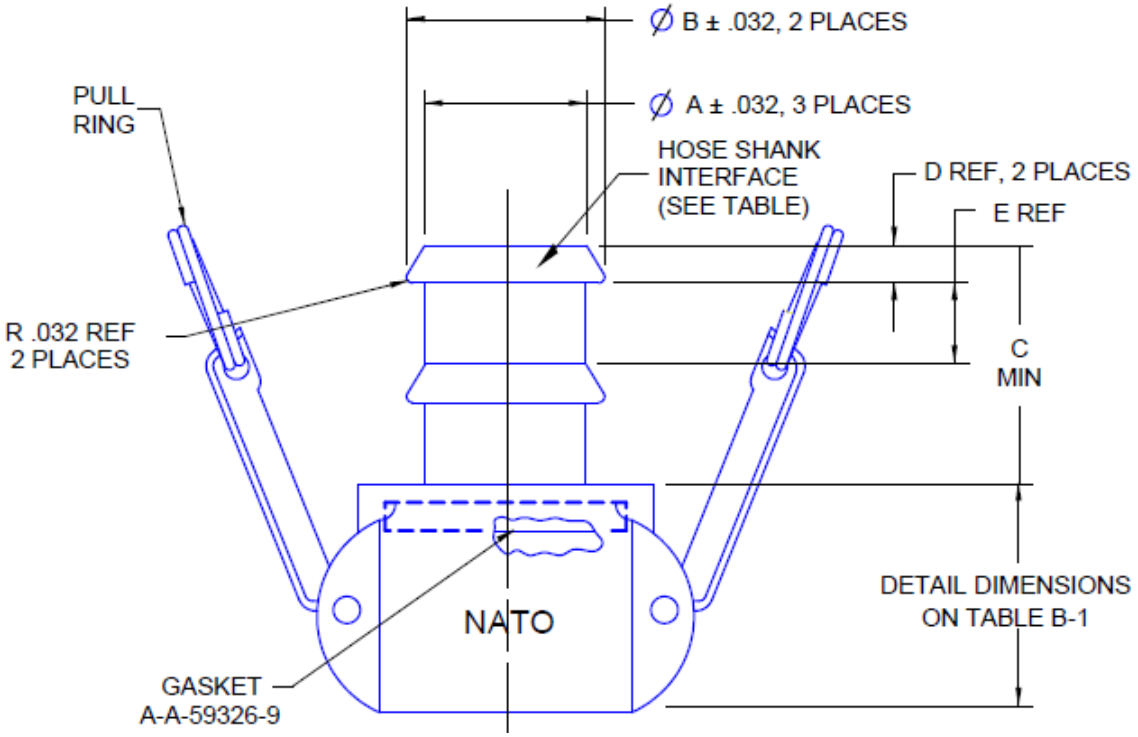


NOMINAL SIZE		DIMENSIONS				
inch	mm	inch				
		A	B	C	D	E
4	100	3.969	4.125	4.25	.50	1.75

NOTES:

1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure : 300 psi. (20 bar)
6. Working pressure : 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance - ± .02 for two place decimals, ± .05 for three place decimals, angles ± 1° unless otherwise specified hereon

TABLE B-6 Coupling Half, Quick-Disconnect, Cam-Locking, Male Hose Shank, Sewage



NOMINAL SIZE		DIMENSIONS					
inch	mm	inch					
		A	B	C	D	E	GASKET
4	100	3.969	4.125	4.25	.50	1.62	CID A-A-59326D-9

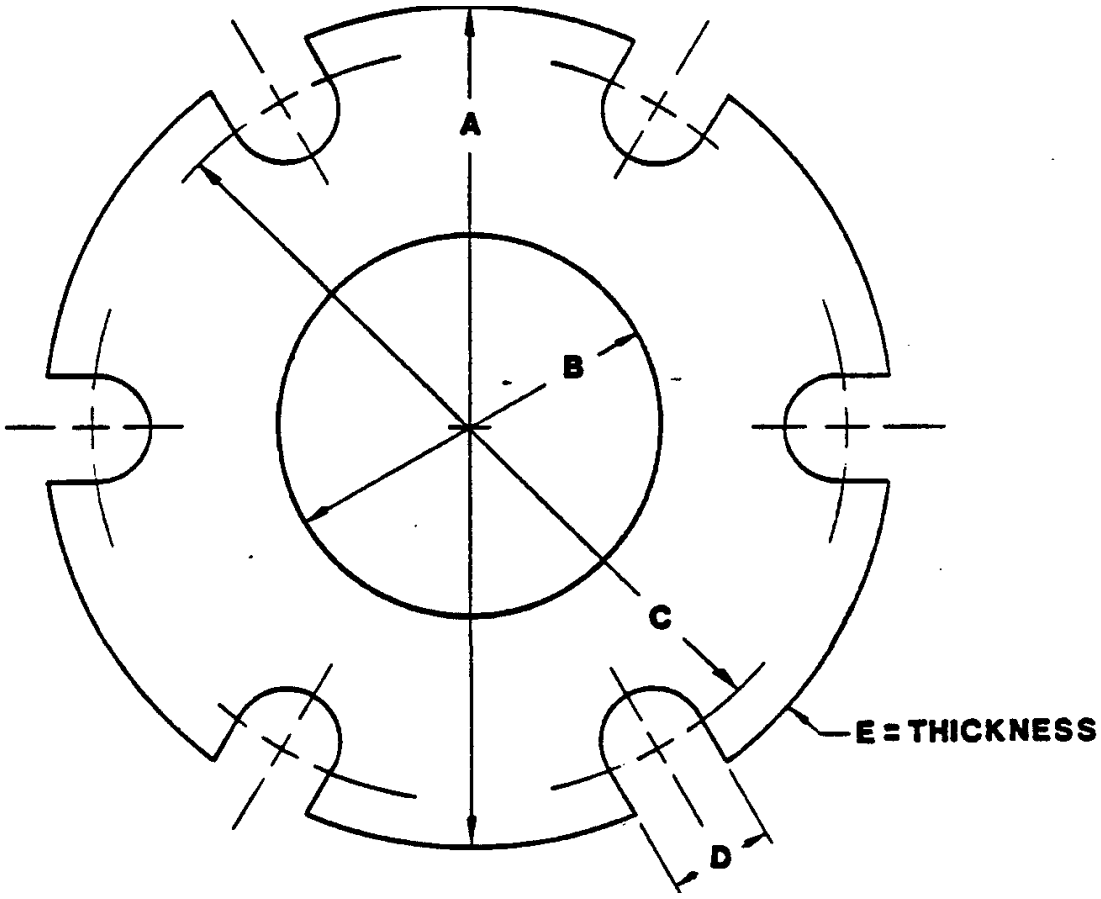
NOTES:

1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure : 300 psi. (20 bar)
6. Working pressure : 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance - ± .02 for two place decimals, ± .05 for three place decimals, angles ± 1° unless otherwise specified hereon

TABLE B-7 Coupling Half, Quick-Disconnect, Cam-Locking, Female Hose Shank, Sewage

ANNEX C IMO OILY WATER FLANGED FITTING

1. The flanged fitting described in Table C-1 is the IMO standard fitting for the transfer of oily water from ships.
This flange connects to a similar flange at the receiving facility. The connection is bolted and requires a gasket for a leak free connection.
Table C-2 describes the use for the IMO flange as an adapter.



A	B	c	0	E	Slots required :
215	(a)	183	22	20	6 slots equidistant on bolt circle. 20mm bolts and nuts.

(a) Inside diameter as required, but not exceeding 125mm

TABLE C-1 IMO Flange, Oily Water

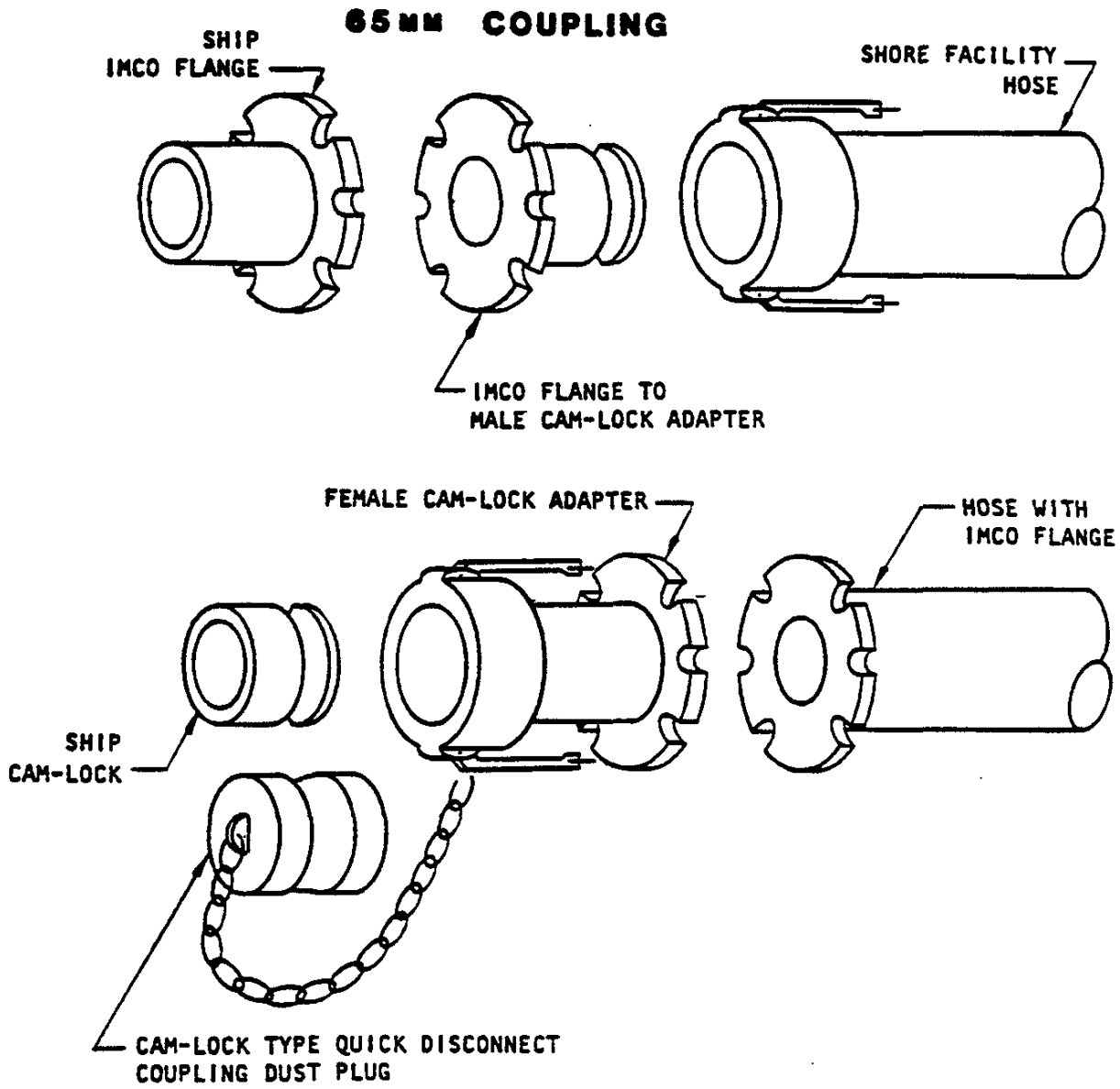


TABLE C-2 IMO Flange, Oily Water; Examples of Use

ANNEX D NATO QUICK DISCONNECT OILY WATER COUPLING

1. The fitting described in Tables D-1 through D-7 is the NATO standard fitting for the transfer of oily water from ships. This fitting is a quick-disconnect cam-locking coupling which requires the male and female coupling halves to be dimensionally compatible. The critical mating dimensions are described in Tables D-1 and D-2. The manufacturing specifications for this fitting are governed by CID A-A-59326D except that not mating dimensions, threads, hose shank diameters, and flanges can be specified for local requirements. Materials for fittings shall be of noncorrosive materials.

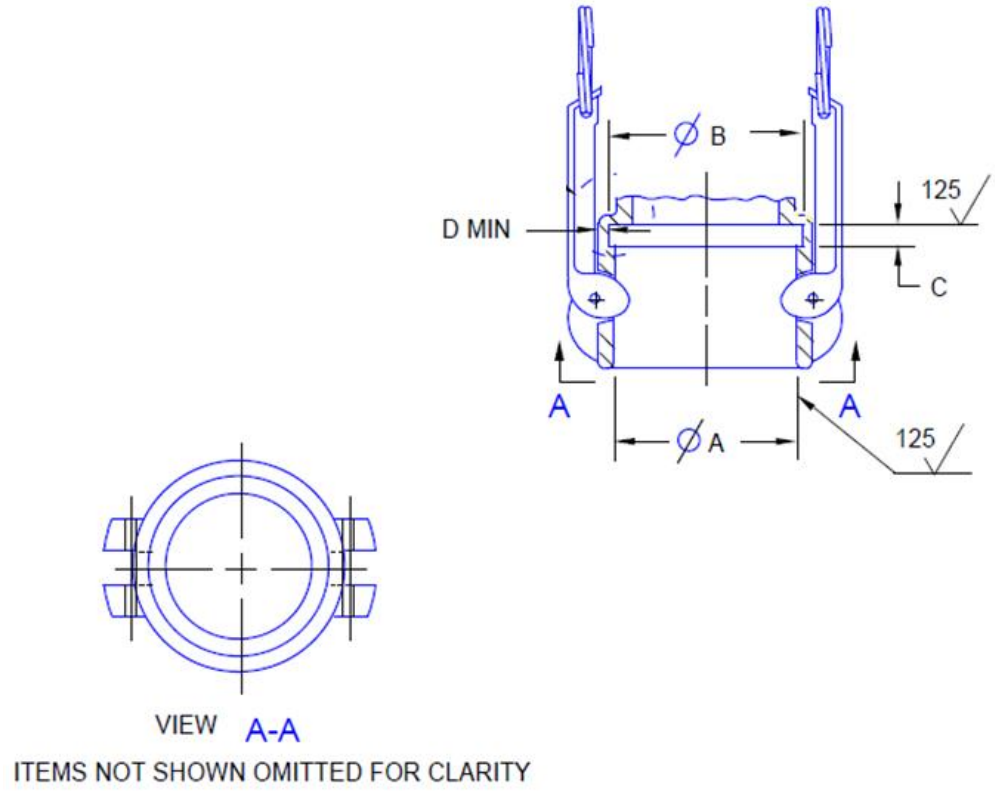
The following Tables provide designs of adapters.

TABLE	TITLE
D-1	Quick-Disconnect Coupling, Female Half, Oily Water
D-2	Quick-Disconnect Coupling, Male Half, Oily Water
D-3	Coupling Half Quick-Disconnect, Cam-Locking Type, Male, Internal Threads, Oily Water
D-4	Coupling Half Quick-Disconnect, Cam-Locking Type, Female, Internal Threads, Oily Water
D-5	Coupling Half Quick-Disconnect, Cam-Locking Type, Male, Flanged, Oily Water
D-6	Coupling Half Quick-Disconnect, Cam-Locking Type, Male, Hose Shank, Oily Water
D-7	Coupling Half Quick-Disconnect, Cam-Locking Type, Female, Hose Shank, Oily Water

2. Dimensions are indicated in inches for critical surfaces to insure compatibility with A-A-59326D. Nominal dimensions of fittings are given in inches and millimetres.

Related Documents

a. CID A-A-59326D
b. STANAG 3328 (AAP-9)- NATO Standard Conversion Tables for Metric, American and British Units.
c. STANAG 3784 PHE - Technical Guidance for the Design and Construction of POL Installations on NATO Airfields.
d. STANAG 3756 PHE - Equipment for Receipt and Delivery of Liquid Fuels

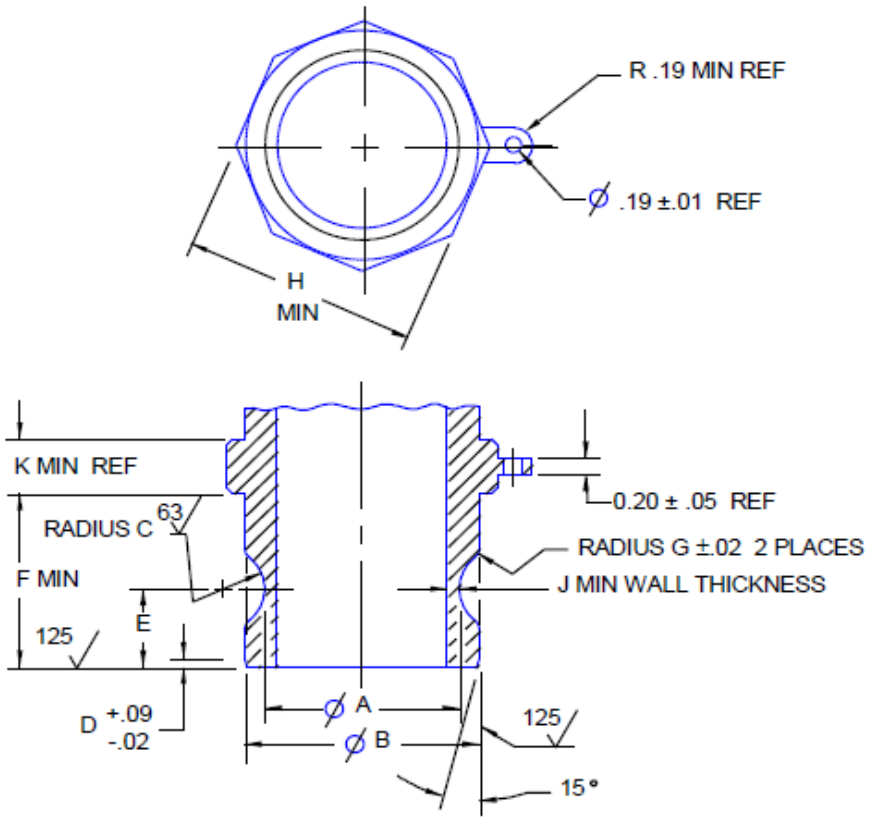


NOMINAL SIZE		DIMENSIONS			
inch	mm		inch		
		A	B	C	D
2-1/2	65	3.011	3.19	.28	.156

NOTES:

1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure : 300 psi. (20 bar)
6. Working pressure : 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance - ± .02 for two place decimals, ± .05 for three place decimals, angles ± 1° unless otherwise specified hereon

TABLE D-1 Quick-Disconnect Coupling, Female Half, Oily Water



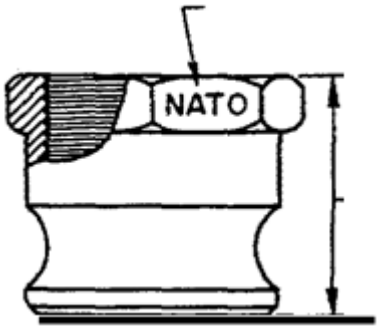
NOMINAL SIZE		DIMENSIONS									
inch	mm	inch									
		A	B	C	D	E	F	G	H	J	K
2-1/2	65	2.545 2.540	2.985 2.980	.441 .435	0.19	.848 .842	1.94	0.12	2.985 2.980	.16	.75

NOTES:

1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure : 300 psi. (20 bar)
6. Working pressure : 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance - ± .02 for two place decimals, ± .05 for three place decimals, angles ± 2° unless otherwise specified hereon

TABLE D-2 Quick-Disconnect Coupling, Male Half, Oily Water

STAMP 3/8 HIGH

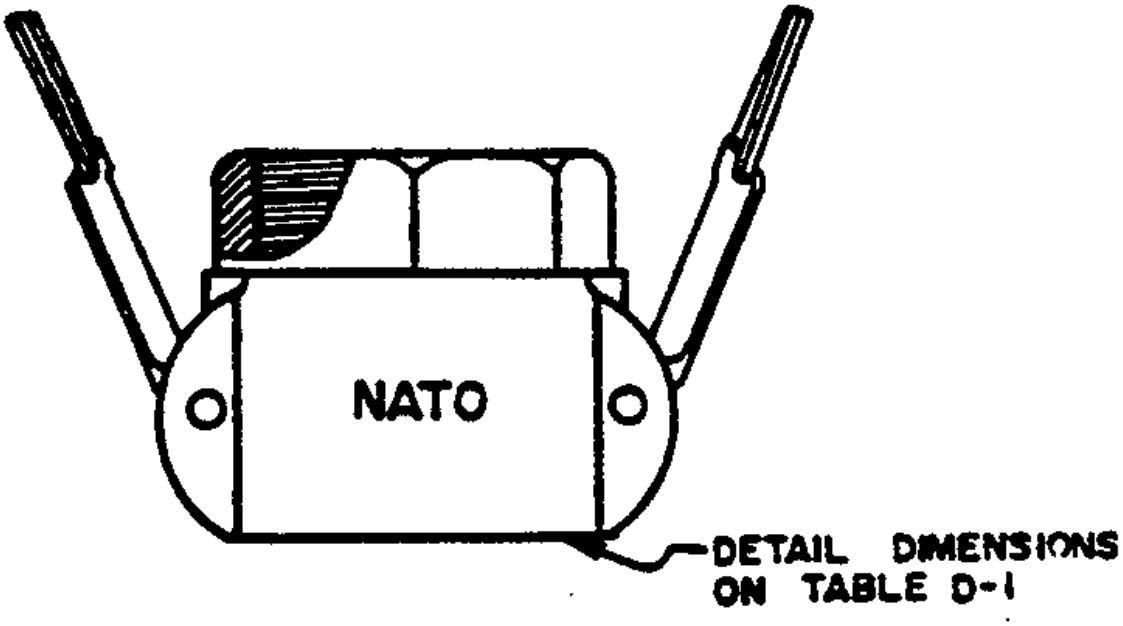


DETAIL DIMENSIONS
ON TABLE D-2

NOTES:

1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure : 300 psi. (20 bar)
6. Working pressure : 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance - ± .02 for two place decimals, ± .05 for three place decimals, angles ± 2° unless otherwise specified hereon

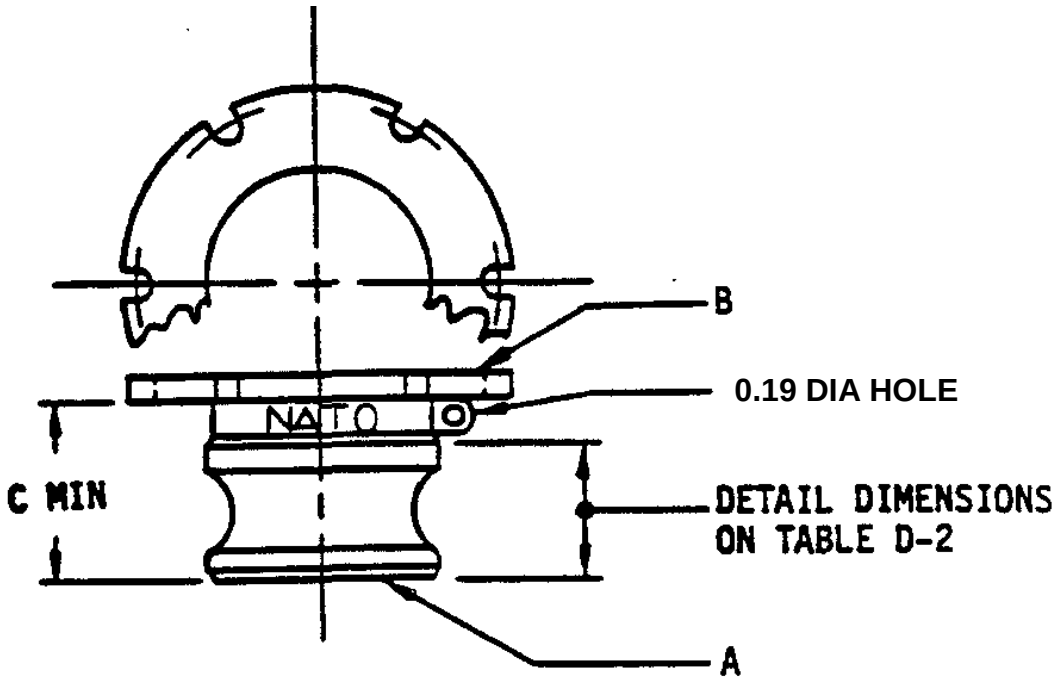
TABLE D-3 Coupling Half Quick-Disconnect Cam-Locking Type, Male Internal Threads, Oily Water



NOMINAL SIZE		GASKET REQUIRED
inch	mm	
2-l/2	65	CID A-A-59326D-7

NOTES:
1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure : 300 psi. (20 bar)
6. Working pressure : 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance - ± .02 for two place decimals, ± .05 for three place decimals, angles ± 1° unless otherwise specified hereon.

TABLE D-4 Coupling Half Quick-Disconnect Cam-Locking Type, Female Internal Threads, Oily Water

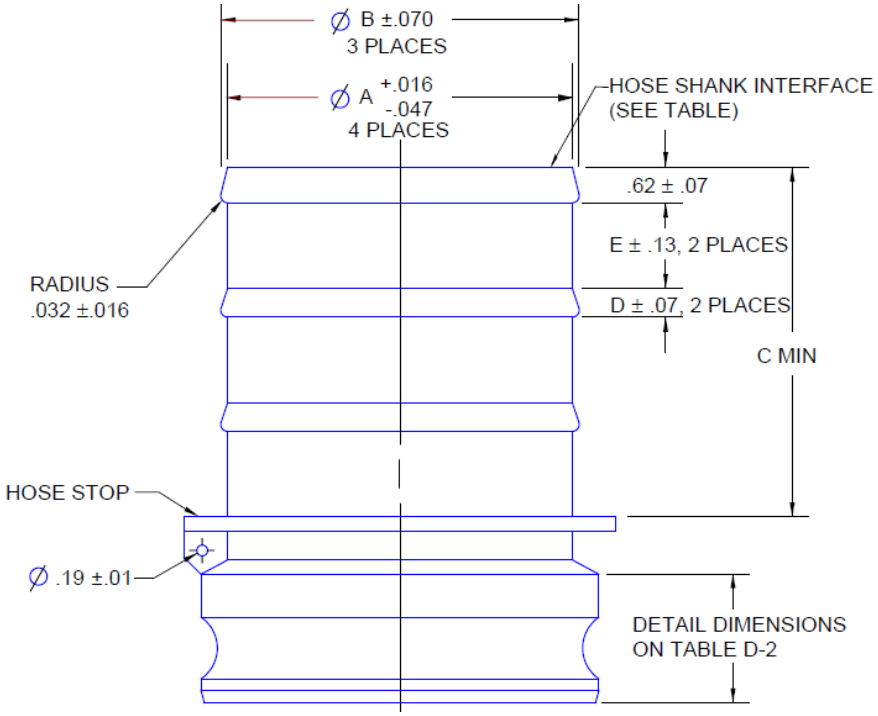


NOMINAL SIZE		DIMENSION
inch	mm	C
2-1/2	65	2.875

NOTES:

1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure : 300 psi. (20 bar)
6. Working pressure : 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance - ± .02 for two place decimals, ± .05 for three place decimals, angles ± 2° unless otherwise specified hereon

TABLE D-5 Coupling Half Quick-Disconnect cam-Locking Type, Male Flanged, Oily Water

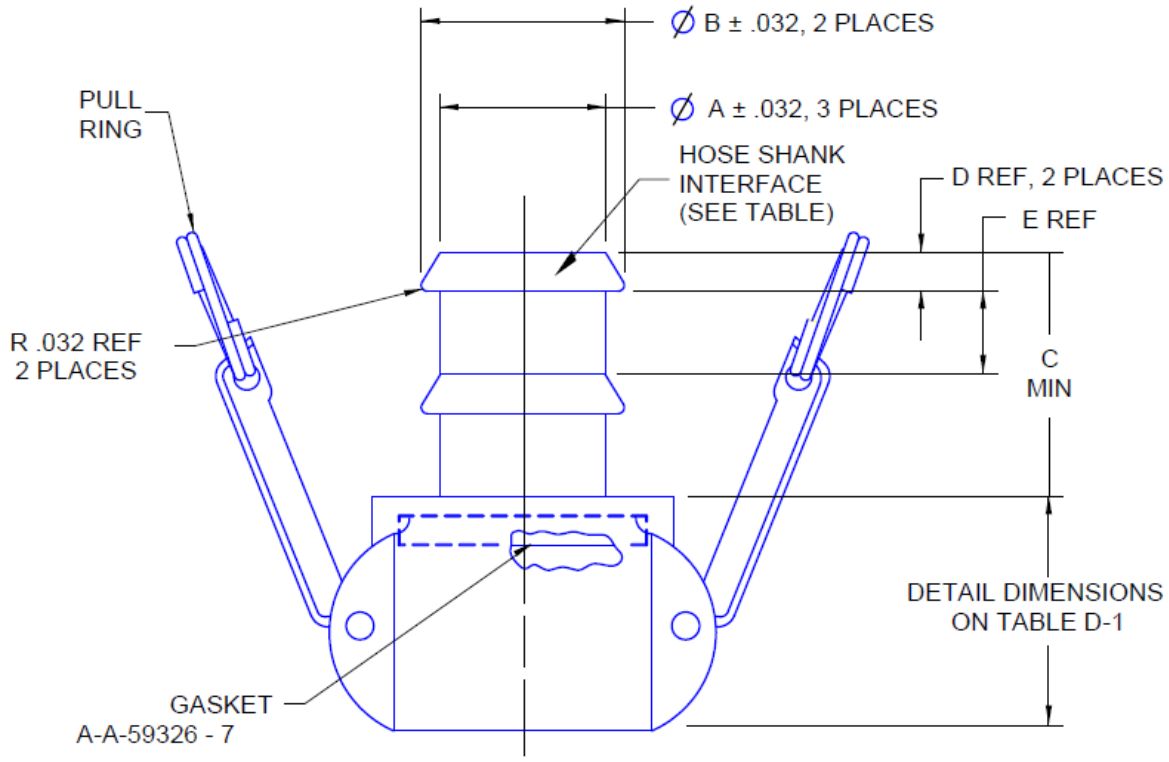


NOMINAL SIZE		DIMENSIONS				
inch	mm	A	B	C	D	E
2-1/2	65	2.484	2.626	3.12	.44	1.38

NOTES:

1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure: 300 psi. (20 bar)
6. Working pressure: 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance: ± .02 for two place decimals, ± .05 for three place decimals, angles ± 1° unless otherwise specified hereon

.TABLE D-6 Coupling Half, Quick-Disconnect, Cam-Locking Type, Male Hose Shank, Oily Water



NOMINAL SIZE DIMENSIONS

inch	mm	A	B	C	D	E	GASKET
2-1/2	65	2.484	2.626	3.12	.44	1.38	A-A-59326D -7

NOTES:

1. Material: UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M, or equivalent material.
2. Finish: Plain.
3. Threads: Standard as Required.
4. Burrs and foreign material shall be removed.
5. Hydrostatic test pressure : 300 psi. (20 bar)
6. Working pressure : 150 psi. (10 bar)
7. Dimensions in inches unless otherwise specified.
8. Tolerance - ± .02 for two place decimals, ± .05 for three place decimals, angles ± 1° unless otherwise specified hereon

TABLE D-7 Coupling Half, Quick-Disconnect, Cam-Locking Type, Female Hose Shank, Oily Water

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