

# HLS

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**Welcome to HLS, We specialize in Ex Equipment designed for use within the hazardous locations present on Oil, Gas and Petrochemical installations.**

**We manufacture our own range of Ex Thread Adaptors & Reducers, Stopping Plugs, Elbows and Breather Drains approved for use in both Zone and Division applications to IECEx, ATEX, AEx, CEC & NEC standards.**

**We custom build Control Panels approved for ATEX applications and also source a broad range of Ex equipment allowing us to provide an extensive range of solutions.**

**We are customer service and quality driven company, with over 40 years of hazardous location experience.**

**Our goal is to be widely acknowledged as a dynamic company delivering quality product along with the highest possible levels of customer service.**

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DATA SHEET:

# ADAPTORS & REDUCERS

Ex approved Adaptors and Reducers are used to match enclosure entry threads with the cable gland or conduit when the threads differ, maintaining the hazardous location certification and the overall integrity of the installation.



## Approvals & Specifications

**ATEX/IEC** Exd IIC Gb & Exe IIC Gb & Ex tb IIIC Db IP6X  
IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-7,  
IEC/EN 60079-31, ATEX/94/9/EC

**NEC/CEC** **Class I, Division 1 Groups ABCD**  
(>M50 Groups CD only)  
UL1203, UL514B, UL50  
C22.2 Nos. 30, 0.5, 0-M, 45, 18.3-04, 94-M91  
**AExd IIC / AExe II Class I, Zone 1**  
UL2279, UL60079-0, UL60079-1, UL60079-7, UL60079-1-1  
E60079-0, E60079-1, E60079-7, E60079-1-1

**Thread Gauging** **Metric: 1.5mm Pitch- Medium Fit 6g/H**  
(Sizes M80 and larger are 2.0mm pitch as Standard)  
**NPT: Male L1 +/-1 Turn**  
**Female L1+ 1/2 to + 2 Turns**  
Other Thread Forms Available on Application

**Material Options** **Nickel Plated Brass 'N'** (-100 to + 150 °C)  
**316 Stainless Steel 'S'** (-100 to +850 °C)

**'O' Ring Options** **Nitrile** (-30 to +90 °C)  
**Silicone** (-50 to +230 °C)  
Nitrile 'O' ring supplied as standard on versions with parallel male threads

**Ingress Protection** **With 'O' Ring IP 66 68, NEMA 4 (316 Stainless 4X)**  
**With Thread Sealant (Non-Hardening) IP 66 68, NEMA 4 (316 Stainless 4X)**  
Without 'O' Ring or Thread Sealant IP54

**Impact Resistance** **7Nm**

**Clearance Holes** HLS Adaptors & Reducers are certified for Exe clearance hole applications, Type 'L1' locknuts are required to secure the installation

## Part Number Structure

Example - A1.20.1/2.N.NT

Important Note—**Always** state the Male Thread first

- Adaptor with hexagon body
- M20 Male Thread
- 1/2" NPT Female Thread
- Nickel Plated Brass
- Nitrile 'O' Ring

Product		Body Style				
<b>A</b>	Adaptors	<b>1</b>	Hexagonal			
<b>R</b>	Reducers	<b>2</b>	Diameter			
Thread Designation						
Metric	NPT	NPS	ISO	ISO	ET	PG
<b>16</b>	1/2	1/2S	1/2P	1/2T	1/2E	<b>7</b>
<b>20</b>	3/4	3/4S	3/4P	3/4T	3/4E	<b>9</b>
<b>25</b>	1	1S	1P	1T	1E	<b>11</b>
<b>32</b>	1 1/4	1 1/4S	1 1/4P	1 1/4T	1 1/4E	<b>13</b>
<b>40</b>	1 1/2	1 1/2S	1 1/2P	1 1/2T	1 1/2E	<b>16P</b>
<b>50</b>	2	2S	2P	2T	2E	<b>21</b>
<b>63</b>	2 1/2	2 1/2S	2 1/2P	2 1/2T	2 1/2E	<b>29</b>
<b>75</b>	3	3S	3P	3T	3E	<b>36</b>
<b>80</b>	3 1/2	3 1/2S	3 1/2P	3 1/2T		<b>42</b>
<b>85</b>	4	4S	4P	4T		<b>48</b>
<b>90</b>						
<b>95</b>						
<b>100</b>						
Note: Metric sizes M80 and larger are 2.0mm pitch is Standard, for 1.5mm pitch add *						
Material		'O' Ring				
<b>N</b>	Nickel Plated Brass	<b>NT</b>	Nitrile (Std.)			
<b>S</b>	316 Stainless Steel	<b>SC</b>	Silicone			

DATA SHEET:

# TYPE 'D' STOPPING PLUGS

Type 'D' Stopping Plugs are used to seal unused cable gland or conduit entries in Ex approved enclosures, maintaining the hazardous location certification and the overall integrity of the installation.



## Approvals & Specifications

ATEX	<b>Exd IIC Gb &amp; Ex tb IIIC Db IP6X</b>
IEC	IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-31 ATEX/94/9/EC
NEC/CEC	<b>Class I, Division 1 Groups ABCD</b> (>M50 Groups CD only) UL1203, UL514B, UL50 C22.2 Nos. 30, 0.5, 0-M, 45, 18.3-04, 94-M91 <b>AExd IIC Class I, Zone 1</b> E60079-0UL2279, UL60079-0, UL60079-1, UL60079-1-1 E60079-1, E60079-1-1
Thread Gauging	<b>Metric: 1.5mm Pitch- Medium Fit 6g</b> (M80 and larger are 2.0mm pitch as Standard) <b>NPT: Male L1 +/- 1 Turns</b> Other Thread Forms Available on Application
Material Options	<b>Nickel Plated Brass 'N'</b> (-100 to + 150°C) <b>316 Stainless Steel 'S'</b> (-100 to +850°C)
Ingress Protection	<b>With Thread Sealant (Non-Hardening) IP 66 68</b> <b>NEMA 4 (316 Stainless 4X)</b> <b>Without Thread Sealant IP54</b>
Impact Resistance	<b>7Nm</b>

## Part Number Structure

*Example - D5.20.S*

- Type 'D5' Stopping Plug, External Socket
- M20x1.5mm Male Thread
- 316 Stainless Steel

Product						
		D5	External Socket			
		D6	Internal Socket			
Thread Designation						
Metric	NPT	NPS	ISO	ISO	ET	PG
16	½	½S	½P	½T	½E	7
20	¾	¾S	¾P	¾T	¾E	9
25	1	1S	1P	1T	1E	11
32	1¼	1¼S	1¼P	1¼T	1¼E	13
40	1½	1½S	1½P	1½T	1½E	16P
50	2	2S	2P	2T	2E	21
63	2½	2½S	2½P	2½T	2½E	29
75	3	2S	3P	3T	3E	36
80	3½	3½S	3½P	3½T		42
85	4	4S	4P	4T		48
90						
95						
100						
Note: Metric sizes M80 and larger are 2.0mm pitch is Standard, for 1.5mm pitch add *						
Material						
N Nickel Plated Brass						
S 316 Stainless Steel						

DATA SHEET:

## TYPE 'U' STOPPING PLUGS

Type 'U' Stopping Plugs are used to seal unused cable gland or conduit entries in Ex approved enclosures, maintaining the hazardous location certification and the overall integrity of the installation.



### Approvals & Specifications

ATEX/IEC	<b>Exd IIC Gb &amp; Exe IIC Gb &amp; Ex tb IIIC Db IP6X</b> IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-7, IEC/EN 60079-31, ATEX/94/9/EC
NEC/CEC	<b>Class I, Division 1 Groups ABCD</b> UL1203, UL514B, UL50 C22.2 Nos. 30, 0.5, 0-M, 45, 18.3-04, 94-M91 <b>AExd IIC / AExe II Class I, Zone 1</b> UL2279, UL60079-0, UL60079-1, UL60079-7, UL60079-1-1 E60079-0, E60079-1, E60079-7, E60079-1-1
Thread Gauging	<b>Metric: 1.5mm Pitch- Medium Fit 6g</b> (Sizes M80 and larger are 2.0mm pitch as Standard) <b>NPT: Male L1 +/-1 Turn</b> Other Thread Forms Available on Application
Material Options	<b>Nickel Plated Brass 'N'</b> (-100 to +150 °C) <b>316 Stainless Steel 'S'</b> (-100 to +850 °C)
'O' Ring Options	<b>Nitrile</b> (-30 to +90 °C) <b>Silicone</b> (-50 to +230 °C) Nitrile 'O' ring supplied as standard on versions with parallel male threads
Ingress Protection	<b>With 'O' Ring IP 66 68, NEMA 4 (316 Stainless 4X)</b> <b>With Thread Sealant (Non-Hardening) IP 66 68 NEMA 4 (316 Stainless 4X)</b> Without 'O' Ring or Thread Sealant IP54
Impact Resistance	<b>7Nm</b>
Clearance Holes	HLS Type 'U' Stopping Plugs are certified for Exe clearance hole applications, Type 'L1' locknuts are required to secure the installation

### Part Number Structure

*Example - U5.20.S.NT*

- Type 'U5' Stopping Plug, External Socket
- M20x1.5mm Male Thread
- 316 Stainless Steel
- Nitrile 'O' Ring

#### Product

**U5** Exd/Exe Stopping Plug

#### Thread Designation

Metric	NPT	NPS	ISO	ISO	ET	PG
16	½	½S	½P	½T	½E	7
20	¾	¾S	¾P	¾T	¾E	9
25	1	1S	1P	1T	1E	11
32	1¼	1¼S	1¼P	1¼T	1¼E	13
40	1½	1½S	1½P	1½T	1½E	16P
50	2	2S	2P	2T	2E	21
63	2½	2½S	2½P	2½T	2½E	29
75	3	3S	3P	3T	3E	36
80	3½	3½S	3½P	3½T		42
85	4	4S	4P	4T		48
90						
95						
100						

*Note: Metric sizes M80 and larger are 2.0mm pitch is Standard, for 1.5mm pitch add \**

#### Material

#### 'O' Ring

<b>N</b>	Nickel Plated Brass	<b>NT</b>	Nitrile (Std.)
<b>S</b>	316 Stainless Steel	<b>SC</b>	Silicone

DATA SHEET:

# TYPE 'BE' BREATHER DRAINS

Type 'Be' Breather Drains are used to allow the air inside an enclosure to breathe with the surrounding atmosphere and also to allow any moisture that enters the enclosure to drain while maintaining the overall integrity of the installation.



## Approvals & Specifications

- ATEX/IEC** Exe IIC Gb & Ex tb IIIC Db IP6X  
IEC/EN 60079-0, IEC/EN 60079-7, IEC/EN 60079-31  
ATEX/94/9/EC
- NEC/CEC** AExe II Class I, Zone 1  
UL2279, UL60079-0, UL60079-7, UL60079-1-1  
E60079-0, E60079-7, E60079-1-1
- Thread Gauging** Metric: 1.5mm Pitch - Medium Fit 6g  
NPT: Male L1 +/-1 Turn  
Other Thread Forms Available on Application
- Material Options** Nickel Plated Brass 'N' (-50 to +80°C)  
316 Stainless Steel 'S' (-50 to +80°C)
- 'O' Ring Options** Nitrile (-30 to +80°C)  
Silicone (-50 to +80°C)  
Nitrile 'O' ring supplied as standard on versions with parallel male threads
- Ingress Protection** With 'O' Ring IP 66, NEMA 4 (316 Stainless 4X)  
With Thread Sealant (Non-Hardening) IP 66, NEMA 4 (316 Stainless 4X)  
Without 'O' Ring or Thread Sealant IP54
- Impact Resistance** 7Nm
- Clearance** HLS Type Be Breather Drains are certified for Exe clearance hole applications where the castellated nut is used to secure the installation

## Part Number Structure

Example - Be.20.N.NT

- Type 'Be' Breather Drain
- M20 Male Thread
- Nickel Plated Brass
- Nitrile 'O' Ring

### Product

Be Type Be Breather Drain

### Thread Designation

Metric	NPT	NPS	ISO	ISO	ET	PG
20	1/2	1/2S	1/2P	1/2T	3/4E	13
25	3/4	3/4S	3/4P	3/4T	1E	16P

### Material

### 'O' Ring

N	Nickel Plated Brass	NT	Nitrile (Std.)
S	316 Stainless Steel	SC	Silicone

DATA SHEET:

# TYPE 'BD' BREATHER DRAINS

Type 'Bd' Breather Drains are used to allow the air inside an 'Ex d' Flameproof or Class I, Division 1 Explosionproof enclosure to breathe with the surrounding atmosphere and also to allow any moisture that enters the enclosure to drain while maintaining the overall integrity of the installation.



## Approvals & Specifications

**ATEX/IEC** Exd IIC Gb & Ex tb IIIC Db IP6X  
IEC/EN 60079-0, IEC/EN 60079-1, IEC 60079-31  
ATEX/94/9/EC

**NEC/CEC** Class I, Division 1 Groups ABCD  
UL1203, UL514B, UL50  
C22.2 Nos. 30, 0.5, 0-M, 45, 18.3-04, 94-M91  
**AExd IIC / AExe II Class I, Zone 1**  
UL2279, UL60079-0, UL60079-1, UL60079-7, UL60079-1-1  
E60079-0, E60079-1, E60079-7, E60079-1-1

**Thread Gauging** Metric: 1.5mm Pitch- Medium Fit 6g  
NPT: Male L1 +/-1 Turn  
Other Thread Forms Available on Application

**Material Options** Nickel Plated Brass 'N' (-50 to + 80°C)  
316 Stainless Steel 'S' (-50 to +80°C)

**'O' Ring Options** Nitrile (-30 to +80°C)  
Silicone (-50 to +80°C)  
Nitrile 'O' ring supplied as standard on versions with parallel male threads

**Ingress Protection** With 'O' Ring IP 66, NEMA 4 (316 Stainless 4X)  
With Thread Sealant (Non-Hardening) IP 66  
NEMA 4 (316 Stainless 4X)  
Without 'O' Ring or Thread Sealant IP54

**Impact Resistance** 7Nm

## Part Number Structure

Example - Bd.20.N.NT

- Type 'Bd' Breather Drain
- M20 Male Thread
- Nickel Plated Brass
- Nitrile 'O' Ring

### Product

**Bd** Type Bd Breather Drain

### Thread Designation

Metric	NPT	NPS	ISO	ISO	ET	PG
<b>20</b>	½	½S	½P	½T	¾E	<b>13</b>
<b>25</b>	¾	¾S	¾P	¾T	<b>1E</b>	<b>16P</b>

### Material

### 'O' Ring

<b>N</b>	Nickel Plated Brass	<b>NT</b>	Nitrile (Std.)
<b>S</b>	316 Stainless Steel	<b>SC</b>	Silicone

DATA SHEET:  
**90° Elbows**

Type 'N' & Type 'fN' 90° Elbows are used to allow a cable gland or conduit entry where spacing or orientation makes a typical installation difficult maintaining the hazardous location certification and the overall integrity of the installation.



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Type 'N'  
 Male x Female

Type 'fN'  
 Female x Female



### Approvals & Specifications

ATEX/IEC **Exd IIC Gb & Exe IIC Gb & Ex tb IIIC Db IP6X**  
 IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-7,  
 IEC/EN 60079-31, ATEX/94/9/EC

NEC/CEC **Class I, Division 1 Groups ABCD**  
 UL1203, UL514B, UL50  
 C22.2 Nos. 30, 0.5, 0-M, 45, 18.3-04, 94-M91  
**AExd IIC / AExe II Class I, Zone 1**  
 UL2279, UL60079-0, UL60079-1, UL60079-7, UL60079-1-1  
 E60079-0, E60079-1, E60079-7, E60079-1-1

Thread Gauging **Metric: 1.5mm Pitch- Medium Fit 6g/H**  
**NPT: Male L1 +/-1 Turn**  
**Female L1+ 1/2 to + 2 Turns**  
 Other Thread Forms Available on Application

Material Options **Nickel Plated Brass 'N' (-100 to + 150° C)**  
**316 Stainless Steel 'S' (-100 to +850° C)**

'O' Ring Options **Nitrile (-30 to +90° C)**  
**Silicone (-50 to +230° C)**  
 Nitrile 'O' ring supplied as standard on versions with parallel male threads

Ingress Protection **With 'O' Ring IP 66 68, NEMA 4 (316 Stainless 4X)**  
**With Thread Sealant (Non-Hardening) IP 66 68, NEMA 4 (316 Stainless 4X)**  
 Without 'O' Ring or Thread Sealant IP54

Impact Resistance **7Nm**

Clearance Holes **HLS 90° Elbows are certified for Exe clearance hole applications, Type 'L1' locknuts are required to secure the installation**

### Part Number Structure

Example - N.20.1/2.N.NT

Important Note—**Always** state the Male Thread first

- 90° Elbows
- M20 Male Thread
- 1/2" NPT Female Thread
- Nickel Plated Brass
- Nitrile 'O' Ring

Product						
N	90° Elbows					
fN	Female x Female 90° Elbows					
Thread Designation						
Metric	NPT	NPS	ISO	ISO	ET	PG
20	1/2	1/2S	1/2P	1/2T	3/4E	13
25	3/4	3/4S	3/4P	3/4T	1E	16P
32	1	1S	1P	1T	1 1/4E	21
Material			'O' Ring			
N	Nickel Plated Brass		NT	Nitrile (Std.)		
S	316 Stainless Steel		SC	Silicone		

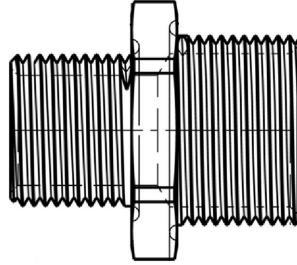
DATA SHEET:

# MALE X MALE ADAPTORS

Male x Male Adaptors are used to connect two female threads, maintaining the hazardous location certification and the overall integrity of the installation.



Type: M1



## Approvals & Specifications

**ATEX/IEC Exd IIC Gb & Exe IIC Gb & Ex tb IIIC Db IP6X**  
IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-7,  
IEC/EN 60079-31, ATEX/94/9/EC

**NEC/CEC Class I, Division 1 Groups ABCD**  
(>M50 Groups CD only)  
UL1203, UL514B, UL50  
C22.2 Nos. 30, 0.5, 0-M, 45, 18.3-04, 94-M91  
**AExd IIC / AExe II Class I, Zone 1**  
UL2279, UL60079-0, UL60079-1, UL60079-7, UL60079-1-1  
E60079-0, E60079-1, E60079-7, E60079-1-1

**Thread Gauging Metric: 1.5mm Pitch- Medium Fit 6g**  
(Sizes M80 and larger are 2.0mm pitch as Standard)  
**NPT: Male L1 +/-1 Turn**  
Other Thread Forms Available on Application

**Material Options Nickel Plated Brass 'N' (-100 to + 150° C)**  
**316 Stainless Steel 'S' (-100 to +850° C)**

**'O' Ring Options Nitrile (-30 to +90° C)**  
**Silicone (-50 to +230° C)**  
Nitrile 'O' ring supplied as standard on versions with parallel male threads

**Ingress Protection With 'O' Ring IP 66 68, NEMA 4 (316 Stainless 4X)**  
**With Thread Sealant (Non-Hardening) IP 66 68, NEMA 4 (316 Stainless 4X)**  
Without 'O' Ring or Thread Sealant IP54

**Impact Resistance 7Nm**

## Part Number Structure

Example - M1.20.½.N.NT

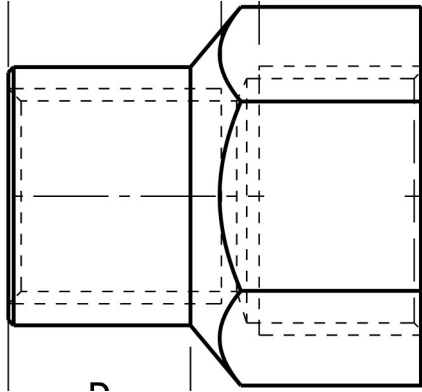
- Adaptor with hexagon body
- M20 Male Thread
- ½" NPT Male Thread
- Nickel Plated Brass
- Nitrile 'O' Ring

Product		Body Style				
<b>M</b>	M x M Adaptor	<b>1</b>	Hexagonal Diameter			
		<b>2</b>	Hexagonal Diameter			
Thread Designation						
Metric	NPT	NPS	ISO	ISO	ET	PG
16	½	½S	½P	½T	½E	7
20	¾	¾S	¾P	¾T	¾E	9
25	1	1S	1P	1T	1E	11
32	1¼	1¼S	1¼P	1¼T	1¼E	13
40	1½	1½S	1½P	1½T	1½E	16P
50	2	2S	2P	2T	2E	21
63	2½	2½S	2½P	2½T	2½E	29
75	3	3S	3P	3T	3E	36
80	3½	3½S	3½P	3½T		42
85	4	4S	4P	4T		48
90						
95						
100						
Note: Metric sizes M80 and larger are 2.0mm pitch is Standard, for 1.5mm pitch add *						
Material			'O' Ring			
<b>N</b>	Nickel Plated Brass		<b>NT</b>	Nitrile (Std.)		
<b>S</b>	316 Stainless Steel		<b>SC</b>	Silicone		

DATA SHEET:

# FEMALE X FEMALE ADAPTORS

Female x Female Adaptors are used to connect two male threads, maintaining the hazardous location certification and the overall integrity of the installation.



## Approvals & Specifications

**ATEX/IECEX** Exd IIC Gb & Exe IIC Gb & Ex tb IIIC Db IP6X  
IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-7,  
IEC/EN 60079-31, ATEX/94/9/EC

**NEC/CEC** **Class I, Division 1 Groups ABCD**  
(->M50 Groups CD only)  
UL1203, UL514B, UL50  
C22.2 Nos. 30, 0.5, 0-M, 45, 18.3-04, 94-M91  
**AExd IIC / AExe II Class I, Zone 1**  
UL2279, UL60079-0, UL60079-1, UL60079-7, UL60079-1-1  
E60079-0, E60079-1, E60079-7, E60079-1-1

**Thread Gauging** **Metric 1.5mm Pitch- Medium Fit 6H**  
(Sizes M80 and larger are 2.0mm pitch as Standard)  
**NPT - Female L1+ 1/2 to + 2 Turns**  
Other Thread Forms Available on Application

**Material Options** **Nickel Plated Brass 'N'** (-100 to + 150 °C)  
**316 Stainless Steel 'S'** (-100 to +850 °C)

**Ingress Protection** **With Thread Sealant (Non-Hardening) IP 66**  
**68, NEMA 4 (316 Stainless 4X)**  
Without Thread Sealant IP54

**Impact Resistance** **7Nm**

## Part Number Structure

Example - F1.20.1/2.N

- Female x Female Adaptor with hexagon body
- M20 Female Thread
- 1/2" NPT Female Thread
- Nickel Plated Brass

Product		Body Style				
<b>F</b>	Female x Female	<b>1</b>	Hexagonal	<b>2</b>	Diameter	
Thread Designation						
Metric	NPT	NPS	ISO	ISO	ET	PG
<b>16</b>	1/2	1/2S	1/2P	1/2T	1/2E	<b>7</b>
<b>20</b>	3/4	3/4S	3/4P	3/4T	3/4E	<b>9</b>
<b>25</b>	1	1S	1P	1T	1E	<b>11</b>
<b>32</b>	1 1/4	1 1/4S	1 1/4P	1 1/4T	1 1/4E	<b>13</b>
<b>40</b>	1 1/2	1 1/2S	1 1/2P	1 1/2T	1 1/2E	<b>16P</b>
<b>50</b>	2	2S	2P	2T	2E	<b>21</b>
<b>63</b>	2 1/2	2 1/2S	2 1/2P	2 1/2T	2 1/2E	<b>29</b>
<b>75</b>	3	3S	3P	3T	3E	<b>36</b>
<b>80</b>	3 1/2	3 1/2S	3 1/2P	3 1/2T		<b>42</b>
<b>85</b>	4	4S	4P	4T		<b>48</b>
<b>90</b>						
<b>95</b>						
<b>100</b>						
<i>Note: Metric sizes M80 and larger are 2.0mm pitch is Standard, for 1.5mm pitch add *</i>						
Material						
<b>N</b>	Nickel Plated Brass					
<b>S</b>	316 Stainless Steel					

## THREAD DIMENSION & COMPARISON CHART

ISO Metric			NPT (& NPS 'S')			ISO Pipe (& Taper 'T') see below			ET			PG		
IEC 60423:1993			ASME B1.20.1-1983			7-2:1982 (UNI6125)			Imperial Conduit BS31			DIN 40430 (Withdrawn)		
Size	Major Dia	TPI	Size	Major Dia	TPI	Size	Major Dia	TPI	Size	Major Dia	TPI	Size	Major Dia	TPI
												7	12.50	20
16	15.97	16.93				3/8P	16.66	19	5/8E	15.88	18	9	15.20	18
												11	18.60	18
20	19.97	16.93	1/2	21.34	14	1/2P	20.96	14	3/4E	19.05	16	13	20.40	18
25	24.97	16.93	3/4	26.67	14	3/4P	26.44	14	1E	25.40	16	16P	22.50	18
32	31.97	16.93	1	33.40	11.5	1P	33.25	11	1 1/4E	31.75	16	21	28.30	16
40	39.97	16.93	1 1/4	42.16	11.5	1 1/4P	41.91	11	1 1/2E	38.10	14	29	37.00	16
50	49.97	16.93	1 1/2	48.26	11.5	1 1/2P	47.80	11	2E	50.80	14	36	47.00	16
63	62.97	16.93	2	60.33	11.5	2P	59.61	11	2 1/2E	63.50	14	42	54.00	16
75	74.97	16.93	2 1/2	73.03	8	2 1/2P	75.18	11	3E	76.20	14	48	59.30	16
80	79.97	12.70												
85	84.97	12.70												
90	89.97	12.70	3	88.90	8	3P	87.88	11	ISO Pipe Threads are also known as: Japan - PF (JIS B 303) Europe - G (Parallel) GK (Taper); R (Parallel) RK (Taper) UK - BSPP (Parallel) BSPT (Taper) CIS - K mpy (Taper)					
95	94.97	12.70												
100	99.97	12.70	3 1/2	101.60	8									
			4	114.30	8									

**\* Major diameter dimensions are shown in mm**

## PART NUMBER STRUCTURE

*Typical Part Number: A1.20.½.N.NT*

Important Note—Always state the Male Thread first

- Adaptor with hexagon body
- M20 Male Thread
- ½" NPT Female Thread
- Nickel Plated Brass
- Nitrile 'O' Ring

Product		Body Style	
<b>A</b>	Adaptors	<b>1</b>	Hexagonal Body
<b>R</b>	Reducers	<b>2</b>	Diameter Body
<b>N</b>	90° Elbows (fN Female x Female)	<b>3</b>	Diameter Body with Milled Flats
<b>M</b>	Male x Male Adaptors	<b>4</b>	Diameter Body with Milled Hex
<b>F</b>	Female x Female Adaptors	<b>5</b>	External Socket Stopping Plug
<b>U</b>	Exd/Exe Stopping Plug	<b>6</b>	Internal Socket Stopping Plug
<b>D</b>	Exd Stopping Plug		
<b>Bd</b>	Exd Breather/ Drain Plug		
<b>Be</b>	Exe Breather/ Drain Plug		

### Thread Designation

Metric	NPT	NPS	ISO	ISO	ET	PG
16	½	½S	½P	½T	½E	7
20	¾	¾S	¾P	¾T	¾E	9
25	1	1S	1P	1T	1E	11
32	1¼	1¼S	1¼P	1¼T	1¼E	13
40	1½	1½S	1½P	1½T	1½E	16P
50	2	2S	2P	2T	2E	21
63	2½	2½S	2½P	2½T	2½E	29
75	3	3S	3P	3T	3E	36
80	3½	3½S	3½P	3½T		42
85	4	4S	4P	4T		48
90						
95						
100						

Note: Metric sizes M80 and larger are 2.0mm pitch as Standard, for 1.5mm pitch add \*

### Material

<b>N</b>	Nickel Plated Brass
<b>S</b>	316 Stainless Steel

### 'O' Ring

<b>NT</b>	Nitrile - Standard
<b>SC</b>	Silicone