

# Metallic (Exd/Exe) adaptors and reducers – AD-U / RD-U Series

## Technical specification

Redapt AD-U and RD-U series of explosion-proof metallic adaptors and reducers provide a method of matching electrical thread forms on hazardous area approved equipment whilst ensuring the integrity and Ex approval of the installation is maintained.

Manufactured from hexagon material to facilitate easy installation, they are also supplied complete with a captive O-ring seal. The O-ring is located within a recess on the face of the product, helping to protect the O-ring from the environmental damage and ensuring it is not displaced during installation.

Designed for hazardous area applications and the range is certified to protection concepts Exd "Flameproof" and Exe "Increased Safety" for use in Zone 1 and Zone 2 applications. Also certified Ex tb "dust tight" for use in Zone 21 & 22 applications.



Type AD-U

## Certifications and compliances



### Code of protection categories

|               |                                                                                                                                                                                                                                                          |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ATEX:</b>  | I M2/II 2 GD                                                                                                                                                                                                                                             |
| <b>IECEX:</b> | Ex db I/IIC Mb/Gb, Ex eb I/IIC Mb/Gb, Ex tb IIIC Db (Aluminium not mining)                                                                                                                                                                               |
| <b>CSA:</b>   | RD-U Ex db / Ex eb IIC Gb IP66/67/68; CI I Zn 1 AEx eb / AEx db IIC Gb IP54; CI I Div1 Gr ABCD CI II Gr EFG CI III; Type 3<br>AD-U Ex db / Ex eb IIC Gb IP66/67/68; CI I Zn 1 AEx eb / AEx db IIC Gb IP54; CI I Div1 Gr ABCD CI II Gr EFG CI III; Type 3 |



Type RD-U

### Compliance standards

|               |                                                                                                |
|---------------|------------------------------------------------------------------------------------------------|
| <b>ATEX:</b>  | EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31                                                |
| <b>IECEX:</b> | IEC 60079-0, IEC 60079-1, IEC 60079-7, IEC 60079-31                                            |
| <b>CSA:</b>   | CAN/CSA C22.2 No. 60079-0, No. 60079-1, No. 60079-7, ANSI/UL 60079-0, 60079-1, 60079-7, UL1203 |

### Certificate details

|                 |                                   |
|-----------------|-----------------------------------|
| <b>ATEX:</b>    | ITS16ATEX101339X                  |
| <b>IECEX:</b>   | IECEX ITS 16.0013X                |
| <b>CSA:</b>     | CSA01CA1248014X                   |
| <b>EAC:</b>     | RU C-GB.MK062.B.06225             |
| <b>CCoE:</b>    | P362565/1 (AD-U) ; P485509 (RD-U) |
| <b>INMETRO:</b> | NCC 18.0133 X                     |

### Ingress protection (IP):

IP64 when fitted without sealing washer. IP66/IP68 when fitted with O-ring or thread sealant according to manufacturer's instructions.

### Temperature

Temperature will depend on the type of O-ring used:

|                 |                                       |
|-----------------|---------------------------------------|
| None:           | -60°C to ~ +200°C                     |
| Nitrile:        | -30°C to +80°C (supplied as standard) |
| EPDM:           | -50°C to +100°C                       |
| Neoprene:       | -40°C to +80°C                        |
| Viton:          | -20°C to +180°C                       |
| Silicone:       | -60°C to +180°C                       |
| Fluorosilicone: | -60°C to +130°C                       |

*The maximum temperature is limited to +150°C for Group I applications*

### Plating options

Electroless nickel  
Zinc  
Chromated  
Others on application

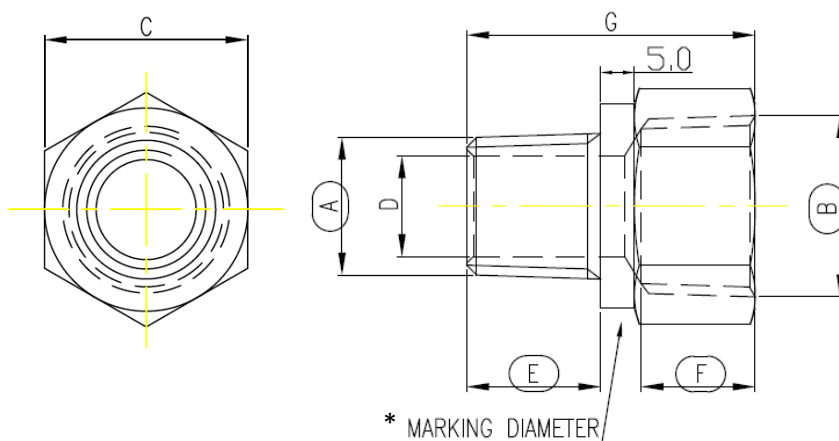
### Threadforms

Metric  
NPT  
Pg  
ISO Pipe (BSP)  
ET

Note : stainless steel may not have the roll marking collar.

# Metallic (Exd/Exe) adaptors and reducers - Dimensions

AD-U



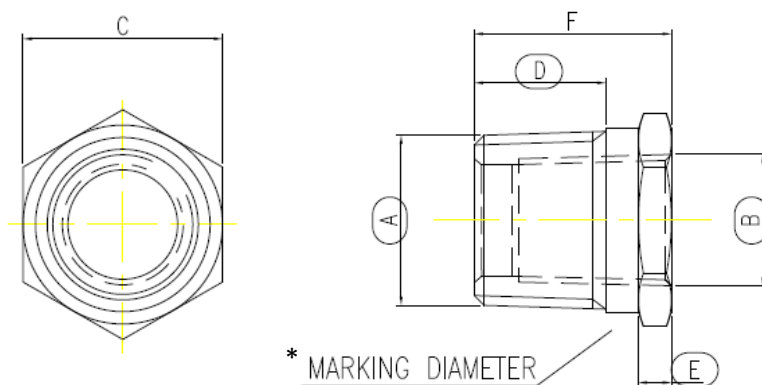
| A    | B      | C     | D    | E             | F            | G            |
|------|--------|-------|------|---------------|--------------|--------------|
| Male | Female | A/F   | Bore | Thread length | Thread depth | Total length |
| M16  | M16    | 23.4  | 10.0 | 16.0          | 17.0         | 38.5         |
|      | M20    | 23.4  | 10.0 | 16.0          | 17.0         | 38.5         |
| M20  | M20    | 27.0  | 14.0 | 16.0          | 17.0         | 38.5         |
|      | M25    | 30.5  | 14.0 | 16.0          | 17.0         | 38.5         |
| M25  | M25    | 31.8  | 18.0 | 16.0          | 17.0         | 38.5         |
|      | M32    | 37.6  | 18.0 | 16.0          | 17.0         | 38.5         |
| M32  | M32    | 37.6  | 24.0 | 16.0          | 17.0         | 38.5         |
|      | M40    | 47.2  | 24.0 | 16.0          | 17.0         | 38.5         |
| M40  | M40    | 47.2  | 32.0 | 16.0          | 16.5         | 38.5         |
|      | M50    | 55.9  | 32.0 | 16.0          | 17.0         | 39.5         |
| M50  | M50    | 57.2  | 41.0 | 16.0          | 17.0         | 39.5         |
|      | M63    | 70.1  | 41.0 | 16.0          | 17.0         | 39.5         |
| M63  | M63    | 70.1  | 53.0 | 16.0          | 17.0         | 39.5         |
|      | M75    | 90.2  | 53.0 | 16.0          | 17.0         | 39.5         |
| M75  | M75    | 90.2  | 64.0 | 16.0          | 16.5         | 39.5         |
|      | M90    | 106.4 | 64.0 | 16.0          | 22.0         | 45.0         |
| M90  | M90    | 106.4 | 78.0 | 20.0          | 22.0         | 49.0         |
|      | M100   | 114.3 | 78.0 | 20.0          | 22.0         | 49.0         |
| M100 | M100   | 114.3 | 88.0 | 20.0          | 22.0         | 49.0         |

| A         | B         | C     | D     | E             | F            | G            |
|-----------|-----------|-------|-------|---------------|--------------|--------------|
| Male      | Female    | A/F   | Bore  | Thread length | Thread depth | Total length |
| 1/2 NPT   | 1/2 NPT   | 23.4  | 15.0  | 20.0          | 20.0         | 46.0         |
|           | 3/4 NPT   | 30.5  | 15.0  | 20.0          | 20.0         | 46.0         |
| 3/4 NPT   | 3/4 NPT   | 30.5  | 19.0  | 20.0          | 20.0         | 46.0         |
|           | 1 NPT     | 37.6  | 19.0  | 20.0          | 25.0         | 51.0         |
| 1 NPT     | 1 NPT     | 37.6  | 25.0  | 25.0          | 25.0         | 56.0         |
|           | 1.1/4 NPT | 47.2  | 25.0  | 25.0          | 25.0         | 56.0         |
| 1.1/4 NPT | 1.1/4 NPT | 47.2  | 32.0  | 25.0          | 25.0         | 56.0         |
|           | 1.1/2 NPT | 55.9  | 32.0  | 25.0          | 25.0         | 57.0         |
| 1.1/2 NPT | 1.1/2 NPT | 55.9  | 38.0  | 25.0          | 25.0         | 57.0         |
|           | 2 NPT     | 70.1  | 38.0  | 25.0          | 25.0         | 57.0         |
| 2 NPT     | 2 NPT     | 70.1  | 49.0  | 25.0          | 25.0         | 57.0         |
|           | 2.1/2 NPT | 80.0  | 49.0  | 25.0          | 35.0         | 67.0         |
| 2.1/2 NPT | 2.1/2 NPT | 80.0  | 60.0  | 35.0          | 35.0         | 77.0         |
|           | 3 NPT     | 106.4 | 60.0  | 35.0          | 35.0         | 77.0         |
| 3 NPT     | 3 NPT     | 106.4 | 75.0  | 35.0          | 35.0         | 77.0         |
|           | 3.1/2 NPT | 114.3 | 75.0  | 35.0          | 35.0         | 78.0         |
| 3.1/2 NPT | 3.1/2 NPT | 114.3 | 88.0  | 35.0          | 35.0         | 78.0         |
|           | 4 NPT     | 127.0 | 75.0  | 35.0          | 35.0         | 78.0         |
| 4 NPT     | 4 NPT     | 127.0 | 88.0  | 35.0          | 35.0         | 78.0         |
|           | 4 NPT     | 127.0 | 100.0 | 35.0          | 35.0         | 78.0         |

\* Note : stainless steel may not have the roll marking diameter.

# Metallic (Exd/Exe) adaptors and reducers - Dimensions

RD-U



| A    | B           | C     | D             | E              | F            |
|------|-------------|-------|---------------|----------------|--------------|
| Male | Female      | A/F   | Thread length | Hexagon length | Total length |
| M20  | M16 & below | 27.0  | 16.0          | 5.0            | 26.0         |
| M25  | M20 & below | 31.8  | 16.0          | 5.0            | 26.0         |
| M32  | M25 & below | 37.6  | 16.0          | 5.0            | 26.0         |
| M40  | M32 & below | 47.2  | 16.0          | 5.0            | 26.0         |
| M50  | M40 & below | 57.2  | 16.0          | 6.0            | 27.0         |
| M63  | M50 & below | 70.1  | 16.0          | 6.0            | 27.0         |
| M75  | M63 & below | 90.2  | 16.0          | 6.0            | 27.0         |
| M80  | M75 & below | 90.2  | 20.0          | 6.0            | 31.0         |
| M85  | M75 & below | 106.4 | 20.0          | 6.0            | 31.0         |
| M90  | M80 & below | 106.4 | 20.0          | 6.0            | 31.0         |
| M100 | M90 & below | 114.3 | 20.0          | 6.0            | 31.0         |
| M110 | M90 & below | 120.7 | 20.0          | 7.0            | 32.0         |

| A         | B                 | C     | D             | E              | F            |
|-----------|-------------------|-------|---------------|----------------|--------------|
| Male      | Female            | A/F   | Thread length | Hexagon length | Total length |
| 3/4 NPT   | 1/2 NPT & below   | 27.9  | 20.0          | 5.0            | 30.0         |
| 1 NPT     | 3/4 NPT & below   | 34.9  | 25.0          | 5.0            | 35.0         |
| 1.1/4 NPT | 1 NPT & below     | 44.5  | 25.0          | 5.0            | 35.0         |
| 1.1/2 NPT | 1.1/4 NPT & below | 52.1  | 25.0          | 5.0            | 35.0         |
| 2 NPT     | 1.1/2 NPT & below | 61.2  | 25.0          | 6.0            | 36.0         |
| 2.1/2 NPT | 2 NPT & below     | 80.0  | 35.0          | 6.0            | 46.0         |
| 3 NPT     | 2.1/2 NPT & below | 90.2  | 35.0          | 6.0            | 46.0         |
| 3.1/2 NPT | 3 NPT & below     | 106.4 | 35.0          | 6.0            | 46.0         |
| 4 NPT     | 3.1/2 NPT & below | 120.7 | 35.0          | 7.0            | 47.0         |

\*Note : stainless steel may not have the roll marking diameter.

# Metallic (Exd/Exe) adaptors and reducers - Product coding

| Product         | DIGITS 1 & 2 |
|-----------------|--------------|
| Exd/Exe ADAPTOR | <b>AD</b>    |
| Exd/Exe REDUCER | <b>RD</b>    |

| Certification | DIGIT 3                       |
|---------------|-------------------------------|
| <b>U</b>      | Exd I and IIC & Exe I and IIC |

| Material | DIGIT 4         |
|----------|-----------------|
| <b>1</b> | Brass           |
| 2        | Mild steel      |
| 3        | Stainless steel |
| 5        | Aluminium       |

| Plating  | DIGIT 5            |
|----------|--------------------|
| 0        | Unplated           |
| <b>1</b> | Electroless nickel |
| 2        | Zinc               |
| 6        | Chromated          |

## DIGITS 6 & 7 Male thread ; DIGITS 8 & 9 Female thread

| Metric        | ET<br>imperial conduit | NPT                | NPSM           | ISO pipe<br>parallel (BSPP) | ISO pipe<br>taper (BSPT) | PG         |
|---------------|------------------------|--------------------|----------------|-----------------------------|--------------------------|------------|
| 02 M12        |                        |                    |                |                             |                          |            |
| 03 M16        | 17 5/8" ET             | <b>29 1/2" NPT</b> | 42 1/2" NPSM   | 55 1/2" BSPP                | 68 1/2" BSPT             | 79 PG7     |
| <b>04 M20</b> | 18 3/4" ET             | 30 3/4" NPT        | 43 3/4" NPSM   | 56 3/4" BSPP                | 69 3/4" BSPT             | 80 PG9     |
| 05 M25        | 19 1" ET               | 31 1" NPT          | 44 1" NPSM     | 57 1" BSPP                  | 70 1" BSPT               | 81 PG11    |
| 06 M32        | 20 1 1/4" ET           | 32 1 1/4" NPT      | 45 1 1/4" NPSM | 58 1 1/4" BSPP              | 71 1 1/4" BSPT           | 82 PG13.5  |
| 07 M40        | 21 1 1/2" ET           | 33 1 1/2" NPT      | 46 1 1/2" NPSM | 59 1 1/2" BSPP              | 72 1 1/2" BSPT           | 83 PG16    |
| 08 M50        | 22 2" ET               | 34 2" NPT          | 47 2" NPSM     | 60 2" BSPP                  | 73 2" BSPT               | 84 PG21    |
| 09 M63        | 23 2 1/2" ET           | 35 2 1/2" NPT      | 48 2 1/2" NPSM | 61 2 1/2" BSPP              | 74 2 1/2" BSPT           | 85 PG29    |
| 10 M75        | 24 3" ET               | 36 3" NPT          | 49 3" NPSM     | 62 3" BSPP                  | 75 3" BSPT               | 86 PG36    |
| 11 M80 x 2.0  | ET Special             | 37 3 1/2" NPT      | 50 3 1/2" NPSM | 63 3 1/2" BSPP              | 76 3 1/2" BSPT           | 87 PG42    |
| 12 M85 x 2.0  |                        | 38 4" NPT          | 51 4" NPSM     | 64 4" BSPP                  | 77 4" BSPT               | 88 PG48    |
| 13 M90 x 2.0  |                        | NT Special         | NS Special     | BP Special                  | BT Special               | PG Special |
| 14 M100 x 2.0 |                        |                    |                |                             |                          |            |
| 15 M110 x 2.0 |                        |                    |                |                             |                          |            |
| BZ M120 x 2.0 |                        |                    |                |                             |                          |            |

## Example

| Digits 1 & 2 | Digit 3            | Digit 4    | Digit 5           | Digits 6 & 7       | Digits 8 & 9    |
|--------------|--------------------|------------|-------------------|--------------------|-----------------|
| <b>AD</b>    | <b>- U</b>         | <b>- 1</b> | <b>- 1</b>        | <b>- 29</b>        | <b>- 04</b>     |
| Adaptor      | Exd/e<br>certified | Brass      | Nickel-<br>plated | 1/2" NPT<br>(male) | M20<br>(female) |

Always quote male thread first.

Note: threadform codes below to be used for both male and female threads.

# Adaptors and reducers series - selection guide

STEP 1 – To obtain the correct reference number, select the male size from the left hand column, then refer horizontally across the page to the female size (i.e. M32 (male) x M40 (female) = 208). Reference numbers in blue are adaptors; other references are reducers.

## Female Size

|      | Metric |     |     |     |     |     |     |     |     |     |     |      | NPT  |      |      |      |     |        |        |     |        |     | PG     |     |       |      |       |     |      |      |      |      |      |      |
|------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|-----|--------|--------|-----|--------|-----|--------|-----|-------|------|-------|-----|------|------|------|------|------|------|
| Male | M16    | M20 | M25 | M32 | M40 | M50 | M63 | M75 | M80 | M85 | M90 | M100 | M110 | M120 | 1/2" | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"  | 2 1/2" | 3"  | 3 1/2" | 4"  | PG7&9 | PG11 | PG13. | 5   | PG16 | PG21 | PG29 | PG36 | PG42 | PG48 |
| M16  | 201    | 201 |     |     |     |     |     |     |     |     |     |      |      |      | 216  |      |     |        |        |     |        |     |        |     | 201   | 201  | 201   |     |      |      |      |      |      |      |
| M20  | 301    | 202 | 203 |     |     |     |     |     |     |     |     |      |      |      | 217  | 218  |     |        |        |     |        |     |        |     | 301   | 202  | 202   | 202 | 204  |      |      |      |      |      |
| M25  | 303    | 303 | 257 | 206 |     |     |     |     |     |     |     |      |      |      | 303  | 219  | 221 |        |        |     |        |     |        |     | 303   | 303  | 303   | 257 | 204  |      |      |      |      |      |
| M32  | 305    | 305 | 305 | 206 | 208 |     |     |     |     |     |     |      |      |      | 305  | 305  | 221 | 223    |        |     |        |     |        |     | 305   | 305  | 305   | 305 | 207  | 258  |      |      |      |      |
| M40  | 307    | 307 | 307 | 307 | 208 | 209 |     |     |     |     |     |      |      |      | 307  | 307  | 307 | 223    | 224    |     |        |     |        |     | 307   | 307  | 307   | 307 | 307  | 208  | 209  |      |      |      |
| M50  | 309    | 309 | 309 | 309 | 309 | 259 | 211 |     |     |     |     |      |      |      | 309  | 309  | 309 | 309    | 225    | 226 |        |     |        |     | 309   | 309  | 309   | 309 | 309  | 309  | 210  | 210  | 211  |      |
| M63  | 310    | 310 | 310 | 310 | 310 | 310 | 211 | 212 |     |     |     |      |      |      | 310  | 310  | 310 | 310    | 310    | 226 | 227    |     |        |     | 310   | 310  | 310   | 310 | 310  | 310  | 310  | 310  | 211  |      |
| M75  | 311    | 311 | 311 | 311 | 311 | 311 | 311 | 212 | 261 | 213 | 213 |      |      |      | 311  | 311  | 311 | 311    | 311    | 311 | 360    | 228 |        |     | 311   | 311  | 311   | 311 | 311  | 311  | 311  | 311  | 311  | 311  |
| M80  | 311    | 311 | 311 | 311 | 311 | 311 | 311 | 261 | 261 | 214 | 214 |      |      |      |      |      |     |        |        |     |        |     |        |     |       |      |       |     |      |      |      |      |      |      |
| M85  | 312    | 312 | 312 | 312 | 312 | 312 | 312 | 214 | 214 | 214 | 214 |      |      |      |      |      |     |        |        |     |        |     |        |     |       |      |       |     |      |      |      |      |      |      |
| M90  | 312    | 312 | 312 | 312 | 312 | 312 | 312 | 312 | 214 | 214 | 214 | 214  | 215  |      | 312  | 312  | 312 | 312    | 312    | 312 | 312    | 312 | 312    | 229 | 230   | 231  |       |     |      |      |      |      |      |      |
| M100 | 313    | 313 | 313 | 313 | 313 | 313 | 313 | 313 | 313 | 313 | 313 | 215  | 215  | 262  | 263  | 313  | 313 | 313    | 313    | 313 | 313    | 313 | 313    | 313 | 230   | 231  |       |     |      |      |      |      |      |      |
| M110 | 325    | 325 | 325 | 325 | 325 | 325 | 325 | 325 | 325 | 325 | 325 | 262  | 262  | 263  |      |      |     |        |        |     |        |     |        |     |       |      |       |     |      |      |      |      |      |      |
| M120 | 326    | 326 | 326 | 326 | 326 | 326 | 326 | 326 | 326 | 326 | 326 | 263  | 263  |      |      |      |     |        |        |     |        |     |        |     |       |      |       |     |      |      |      |      |      |      |

|        | Metric |     |     |     |     |     |     |     |     |      | NPT  |      |     |        |        |     |        |     |        |     | PG  |       |      |       |     |      |      |      |      |      |      |     |
|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|-----|--------|--------|-----|--------|-----|--------|-----|-----|-------|------|-------|-----|------|------|------|------|------|------|-----|
| NPT    | M16    | M20 | M25 | M32 | M40 | M50 | M63 | M75 | M90 | M100 | 1/2" | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"  | 2 1/2" | 3"  | 3 1/2" | 4"  | 5"  | PG7&9 | PG11 | PG13. | 5   | PG16 | PG21 | PG29 | PG36 | PG42 | PG48 |     |
| 1/2"   | 314    | 232 | 234 |     |     |     |     |     |     |      | 245  | 246  |     |        |        |     |        |     |        |     |     | 314   | 232  | 232   | 232 | 265  |      |      |      |      |      |     |
| 3/4"   | 315    | 315 | 234 | 235 |     |     |     |     |     |      | 315  | 246  | 247 |        |        |     |        |     |        |     |     | 315   | 315  | 315   | 234 | 235  |      |      |      |      |      |     |
| 1"     | 316    | 316 | 316 | 236 | 237 |     |     |     |     |      | 316  | 316  | 248 | 249    |        |     |        |     |        |     |     | 316   | 316  | 316   | 316 | 236  | 237  |      |      |      |      |     |
| 1 1/4" | 317    | 317 | 317 | 317 | 237 | 238 |     |     |     |      | 317  | 317  | 317 | 249    | 250    |     |        |     |        |     |     | 317   | 317  | 317   | 317 | 317  | 237  | 238  |      |      |      |     |
| 1 1/2" | 318    | 318 | 318 | 318 | 318 | 238 | 240 |     |     |      | 318  | 318  | 318 | 318    | 250    | 251 |        |     |        |     |     | 318   | 318  | 318   | 318 | 318  | 318  | 238  | 239  | 240  |      |     |
| 2"     | 319    | 319 | 319 | 319 | 319 | 319 | 240 | 241 |     |      | 319  | 319  | 319 | 319    | 319    | 251 | 252    |     |        |     |     | 319   | 319  | 319   | 319 | 319  | 319  | 319  | 319  | 240  |      |     |
| 2 1/2" | 320    | 320 | 320 | 320 | 320 | 320 | 242 | 243 |     |      | 320  | 320  | 320 | 320    | 320    | 320 | 253    | 254 |        |     |     | 320   | 320  | 320   | 320 | 320  | 320  | 320  | 320  | 320  |      |     |
| 3"     | 321    | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 243 | 244  | 321  | 321  | 321 | 321    | 321    | 321 | 321    | 254 | 255    |     |     | 321   | 321  | 321   | 321 | 321  | 321  | 321  | 321  | 321  |      |     |
| 3 1/2" | 322    | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 244  | 322  | 322  | 322 | 322    | 322    | 322 | 322    | 322 | 322    | 255 | 256 |       | 322  | 322   | 322 | 322  | 322  | 322  | 322  | 322  | 322  |     |
| 4"     | 323    | 323 | 323 | 323 | 323 | 323 | 323 | 323 | 323 | 323  | 323  | 323  | 323 | 323    | 323    | 323 | 323    | 323 | 323    | 323 | 256 | 264   |      | 323   | 323 | 323  | 323  | 323  | 323  | 323  | 323  | 323 |
| 5"     | -      | -   | -   | -   | -   | -   | -   | -   | -   | -    | 327  | 327  | 327 | 327    | 327    | 327 | 327    | 327 | 327    | 327 | -   | -     | -    | -     | -   | -    | -    | -    | -    | -    | -    |     |

| PG   | Metric |     |     |     |     |     |     | NPT |      |      |     |        |        |     | PG     |         |      |       |     |      |      |     |     |     |   |     |   |     |   |
|------|--------|-----|-----|-----|-----|-----|-----|-----|------|------|-----|--------|--------|-----|--------|---------|------|-------|-----|------|------|-----|-----|-----|---|-----|---|-----|---|
|      | M16    | M20 | M25 | M32 | M40 | M50 | M63 | M75 | 1/2" | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"  | 2 1/2" | PG7&9   | PG11 | PG13. | 5   | PG16 | PG21 | PG2 | 9   | PG3 | 6 | PG4 | 2 | PG4 | 8 |
| 7&9  | 201    | 201 |     |     |     |     |     |     | 216  |      |     |        |        |     |        | 201     | 201  | 201   |     |      |      |     |     |     |   |     |   |     |   |
| 11   | 202    | 202 | 203 |     |     |     |     |     | 217  | 218  |     |        |        |     |        | 301/202 | 202  | 202   | 202 |      |      |     |     |     |   |     |   |     |   |
| 13.5 | 301    | 202 | 203 |     |     |     |     |     | 217  | 218  |     |        |        |     |        | 301     | 202  | 202   | 202 | 204  |      |     |     |     |   |     |   |     |   |
| 16   | 302    | 203 | 203 |     |     |     |     |     | 218  | 218  | 221 |        |        |     |        | 302     | 302  | 203   | 203 | 204  |      |     |     |     |   |     |   |     |   |
| 21   | 304    | 304 | 205 | 206 | 206 |     |     |     | 304  | 220  | 221 |        |        |     |        | 304     | 304  | 304   | 304 | 205  | 258  |     |     |     |   |     |   |     |   |
| 29   | 306    | 306 | 306 | 306 | 208 | 209 |     |     | 306  | 306  | 223 | 223    | 224    |     |        | 306     | 306  | 306   | 306 | 306  | 208  | 209 |     |     |   |     |   |     |   |
| 36   | 308    | 308 | 308 | 308 | 308 | 209 | 211 |     | 308  | 308  | 308 | 224    | 224    |     |        | 308     | 308  | 308   | 308 | 308  | 209  | 210 | 211 |     |   |     |   |     |   |
| 42   | 324    | 324 | 324 | 324 | 324 | 210 | 211 |     | 324  | 324  | 324 | 324    | 324    | 226 |        | 324     | 324  | 324   | 324 | 324  | 324  | 324 | 210 | 211 |   |     |   |     |   |
| 48   | 310    | 310 | 310 | 310 | 310 | 310 | 211 | 211 | 310  | 310  | 310 | 310    | 310    | 226 | 227    | 310     | 310  | 310   | 310 | 310  | 310  | 310 | 310 | 211 |   |     |   |     |   |

## Adaptors and reducers series - selection guide

STEP 2 – Having obtained the reference number, go to the relevant column within the dimension tables to obtain the adaptor or reducer's dimensions. Please note that these dimensions refer to metallic products only.

### Adaptors

| Metric x metric, metric x PG, PG x metric, PG x PG |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |      |      |      |      |
|----------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|------|------|------|------|
| Reference numbers                                  | 201  | 202  | 203  | 204  | 205  | 206  | 207  | 208  | 209  | 210  | 211  | 212   | 213   | 214   | 215   | 216  | 257  | 258  | 259  |
| Hex across flats                                   | 23.4 | 27.0 | 30.5 | 33.0 | 36.0 | 37.6 | 37.6 | 47.2 | 55.9 | 61.2 | 70.1 | 90.2  | 106.4 | 106.4 | 114.3 | 23.4 | 31.8 | 41.3 | 57.2 |
| Hex across corners                                 | 26.8 | 31.0 | 35.0 | 38.0 | 41.5 | 43.2 | 43.2 | 53.4 | 64.3 | 70.4 | 81.8 | 103.7 | 122.4 | 122.4 | 131.4 | 26.8 | 36.1 | 47.7 | 66.0 |
| Male thread length                                 | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16    | 16    | 20    | 20    | 15   | 16   | 16   | 16   |
| Female thread length                               | 17   | 17   | 17   | 17   | 17   | 17   | 17   | 17   | 17   | 17   | 17   | 17    | 22    | 22    | 22    | 20   | 17   | 17   | 17   |
| Total length                                       | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 38.5 | 39.5 | 39.5 | 39.5 | 39.5  | 45.0  | 49.0  | 49.0  | 42.0 | 38.5 | 38.5 | 39.5 |

| Metric x NPT, PG x NPT |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |   |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|---|
| Reference numbers      | 217  | 218  | 219  | 220  | 221  | 222  | 223  | 224  | 225  | 226  | 227  | 228   | 229   | 230   | 231   | 261   | 262   | 263   | - |
| Hex across flats       | 27.0 | 30.5 | 32.0 | 37.6 | 37.6 | 41.3 | 47.2 | 55.9 | 57.2 | 70.1 | 80.0 | 106.4 | 106.4 | 114.3 | 127.0 | 90.2  | 120.7 | 139.7 | - |
| Hex across corners     | 31.0 | 35.0 | 36.7 | 43.2 | 43.2 | 47.5 | 53.4 | 64.3 | 66.0 | 81.8 | 92.0 | 122.4 | 122.4 | 131.4 | 147.0 | 104.1 | 139.4 | 161.3 | - |
| Male thread length     | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16    | 16    | 16    | 16    | 20    | 20    | -     | - |
| Female thread length   | 20   | 20   | 20   | 20   | 25   | 25   | 26   | 26   | 26   | 27   | 40   | 35    | 42    | 42    | 44    | 22    | 22    | 22    | - |
| Total length           | 42   | 42   | 42   | 42   | 47   | 47   | 47   | 48   | 48   | 48   | 58   | 58    | 62    | 62    | 62    | 48    | 48    | 49    | - |

| NPT x metric, NPT x PG |      |      |      |      |      |      |      |      |      |       |       |       |       |       |      |   |   |   |   |
|------------------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|------|---|---|---|---|
| Reference numbers      | 232  | 233  | 234  | 235  | 236  | 237  | 238  | 239  | 240  | 241   | 242   | 243   | 244   | 260   | 265  | - | - | - | - |
| Hex across flats       | 23.4 | 28.6 | 30.5 | 37.6 | 37.6 | 44.5 | 55.9 | 70.1 | 70.1 | 90.2  | 90.2  | 106.4 | 114.3 | 90.2  | 33.0 | - | - | - | - |
| Hex across corners     | 26.8 | 32.9 | 35.0 | 43.2 | 43.2 | 51.1 | 64.3 | 70.4 | 81.8 | 103.7 | 103.7 | 122.4 | 131.4 | 103.7 | 38.0 | - | - | - | - |
| Male thread length     | 20   | 20   | 20   | 20   | 25   | 25   | 25   | 25   | 25   | 25    | 35    | 35    | 35    | 16    | 20   | - | - | - | - |
| Female thread length   | 17   | 17   | 17   | 17   | 17   | 17   | 17   | 17   | 17   | 17    | 17    | 22    | 22    | 35    | 77   | - | - | - | - |
| Total length           | 43   | 43   | 43   | 43   | 48   | 48   | 49   | 49   | 49   | 49    | 59    | 64    | 64    | 58    | 43   | - | - | - | - |

| NPT x NPT            |      |      |      |      |      |      |      |      |      |       |       |       |       |   |   |   |   |   |   |
|----------------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|---|---|---|---|---|---|
| Reference numbers    | 245  | 246  | 247  | 248  | 249  | 250  | 251  | 252  | 253  | 254   | 255   | 256   | 264   | - | - | - | - | - | - |
| Hex across flats     | 23.4 | 30.5 | 37.6 | 37.6 | 47.2 | 55.9 | 70.1 | 80.0 | 80.0 | 106.4 | 114.3 | 127.0 | 158.8 | - | - | - | - | - | - |
| Hex across corners   | 26.8 | 35.0 | 43.2 | 43.2 | 53.4 | 64.3 | 81.8 | 92.0 | 92.0 | 122.4 | 131.4 | 146.0 | 183.3 | - | - | - | - | - | - |
| Male thread length   | 20   | 20   | 20   | 25   | 25   | 25   | 25   | 25   | 35   | 35    | 35    | 35    | 35    | - | - | - | - | - | - |
| Female thread length | 20   | 20   | 25   | 25   | 25   | 25   | 25   | 35   | 35   | 35    | 35    | 35    | 47    | - | - | - | - | - | - |
| Total length         | 46   | 46   | 51   | 56   | 56   | 57   | 57   | 67   | 77   | 77    | 78    | 78    | 81    | - | - | - | - | - | - |

### Reducers

| Metric and PG      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |   |   |   |
|--------------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|-------|-------|---|---|---|
| Reference numbers  | 301  | 302  | 303  | 304  | 305  | 306  | 307  | 308  | 309  | 310  | 311   | 312   | 313   | 324  | 325   | 326   | - | - | - |
| Hex across flats   | 27.0 | 30.5 | 31.8 | 36.0 | 37.6 | 44.5 | 47.2 | 55.9 | 57.2 | 70.1 | 90.2  | 106.4 | 114.3 | 61.2 | 120.7 | 127.0 | - | - | - |
| Hex across corners | 31.0 | 35.0 | 36.7 | 41.5 | 43.2 | 51.1 | 53.4 | 64.3 | 66.0 | 81.8 | 103.7 | 122.4 | 131.0 | 70.7 | 139.4 | 146.6 | - | - | - |
| Male thread length | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16   | 16    | 20    | 20    | 16   | 16    | 16    | - | - | - |
| Total length       | 26   | 26   | 26   | 26   | 26   | 26   | 26   | 27   | 27   | 27   | 27    | 31    | 31    | 27   | 28    | 28    | - | - | - |

| NPT                |      |      |      |      |      |      |      |       |       |       |       |   |   |   |   |   |   |   |   |
|--------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|---|---|---|---|---|---|---|---|
| Reference numbers  | 314  | 315  | 316  | 317  | 318  | 319  | 320  | 321   | 322   | 323   | 327   | - | - | - | - | - | - | - | - |
| Hex across flats   | 23.4 | 27.9 | 34.9 | 44.5 | 52.1 | 61.2 | 80.0 | 90.2  | 106.4 | 120.7 | 146.0 | - | - | - | - | - | - | - | - |
| Hex across corners | 26.8 | 32.1 | 40.2 | 51.1 | 59.9 | 70.4 | 92.0 | 103.7 | 122.4 | 138.8 | 168.6 | - | - | - | - | - | - | - | - |
| Male thread length | 20   | 20   | 25   | 25   | 25   | 25   | 35   | 35    | 35    | 35    | 35    | - | - | - | - | - | - | - | - |
| Total length       | 30   | 30   | 35   | 35   | 35   | 36   | 46   | 46    | 46    | 47    | 47    | - | - | - | - | - | - | - | - |

# Thread dimension chart

## ISO metric

BS 3643 1.5mm pitch

| Size        | Major dia. | TPI   |
|-------------|------------|-------|
| M12         | 11.97      | 16.93 |
| M16         | 15.97      | 16.93 |
| M20         | 19.97      | 16.93 |
| M25         | 24.97      | 16.93 |
| M32         | 31.97      | 16.93 |
| M40         | 39.97      | 16.93 |
| M50         | 49.97      | 16.93 |
| M63         | 62.97      | 16.93 |
| M75         | 74.97      | 16.93 |
| 2.0mm pitch |            |       |
| M80         | 79.97      | 12.70 |
| M85         | 84.97      | 12.70 |
| M90         | 89.97      | 12.70 |
| M100        | 99.97      | 12.70 |
| M110        | 109.97     | 12.70 |
| M120        | 119.97     | 12.70 |

## Alternate ISO pipe thread designations

|        |                                                                                |
|--------|--------------------------------------------------------------------------------|
| UK     | <b>BSP</b> Parallel or Taper<br>BS2279 (BS21)                                  |
| Europe | <b>G</b> (Parallel) <b>GK</b> (Taper)<br><b>R</b> (Parallel) <b>RK</b> (Taper) |
| Japan  | <b>PF</b> (Parallel) JIS B 303                                                 |
| CIS    | <b>K mpy</b> (Taper)                                                           |

## NPT

ANSI/ASME B1.20.1

| Size   | Pipe dia. | TPI   |
|--------|-----------|-------|
| 1/2"   | 21.34     | 14.00 |
| 3/4"   | 26.67     | 14.00 |
| 1"     | 33.40     | 11.50 |
| 1 1/4" | 42.16     | 11.50 |
| 1 1/2" | 48.26     | 11.50 |
| 2"     | 60.33     | 11.50 |
| 2 1/2" | 73.03     | 8.00  |
| 3"     | 88.90     | 8.00  |
| 3 1/2" | 101.60    | 8.00  |
| 4"     | 114.30    | 8.00  |

## PG

DIN 40430

| Size   | Major dia. | TPI   |
|--------|------------|-------|
| PG7    | 12.50      | 20.00 |
| PG9    | 15.20      | 18.00 |
| PG11   | 18.60      | 18.00 |
| PG13.5 | 20.40      | 18.00 |
| PG16   | 22.50      | 18.00 |
| PG21   | 28.30      | 16.00 |
| PG29   | 37.00      | 16.00 |
| PG36   | 47.00      | 16.00 |
| PG42   | 54.00      | 16.00 |
| PG48   | 59.30      | 16.00 |

## BSP ISO pipe thread

ISO R/7; UNI 6125

| Size   | Pipe Dia. | TPI   |
|--------|-----------|-------|
| 3/8"   | 16.66     | 19.00 |
| 1/2"   | 20.96     | 14.00 |
| 3/4"   | 26.44     | 14.00 |
| 1"     | 33.25     | 11.00 |
| 1 1/4" | 41.91     | 11.00 |
| 1 1/2" | 47.80     | 11.00 |
| 2"     | 59.61     | 11.00 |
| 2 1/2" | 75.18     | 11.00 |
| 3"     | 87.88     | 11.00 |

## ET imperial conduit

BS31

| Size   | Major dia. | TPI   |
|--------|------------|-------|
| 5/8"   | 15.88      | 18.00 |
| 3/4"   | 19.05      | 16.00 |
| 1"     | 25.40      | 16.00 |
| 1 1/4" | 31.75      | 16.00 |
| 1 1/2" | 38.10      | 14.00 |
| 2"     | 50.80      | 14.00 |
| 2 1/2" | 63.50      | 14.00 |
| 3"     | 76.20      | 14.00 |

## Thread dimension substitution chart

| Metric     | NPT (or NPS) | PG       | BSP ISO Pipe | ET     |
|------------|--------------|----------|--------------|--------|
| M16        | —            | 7, 9     | —            | 5/8"   |
| M20        | 1/2"         | 11, 13.5 | 1/2"         | 3/4"   |
| M25        | 3/4"         | 16       | 3/4"         | 1"     |
| M32        | 1"           | 21       | 1"           | 1 1/4" |
| M40        | 1 1/4"       | 29       | 1 1/4"       | 1 1/2" |
| M50        | 1 1/2"       | 36       | 1 1/2"       | 2"     |
| M63        | 2"           | 42, 48   | 2"           | 2 1/2" |
| M75        | 2 1/2"       | —        | 2 1/2"       | 3"     |
| M90 x 2.0  | 3"           | —        | 3"           | —      |
| M100 x 2.0 | 3 1/2"       | —        | —            | —      |
| M110 x 2.0 | —            | —        | —            | —      |
| M120 x 2.0 | —            | —        | —            | —      |



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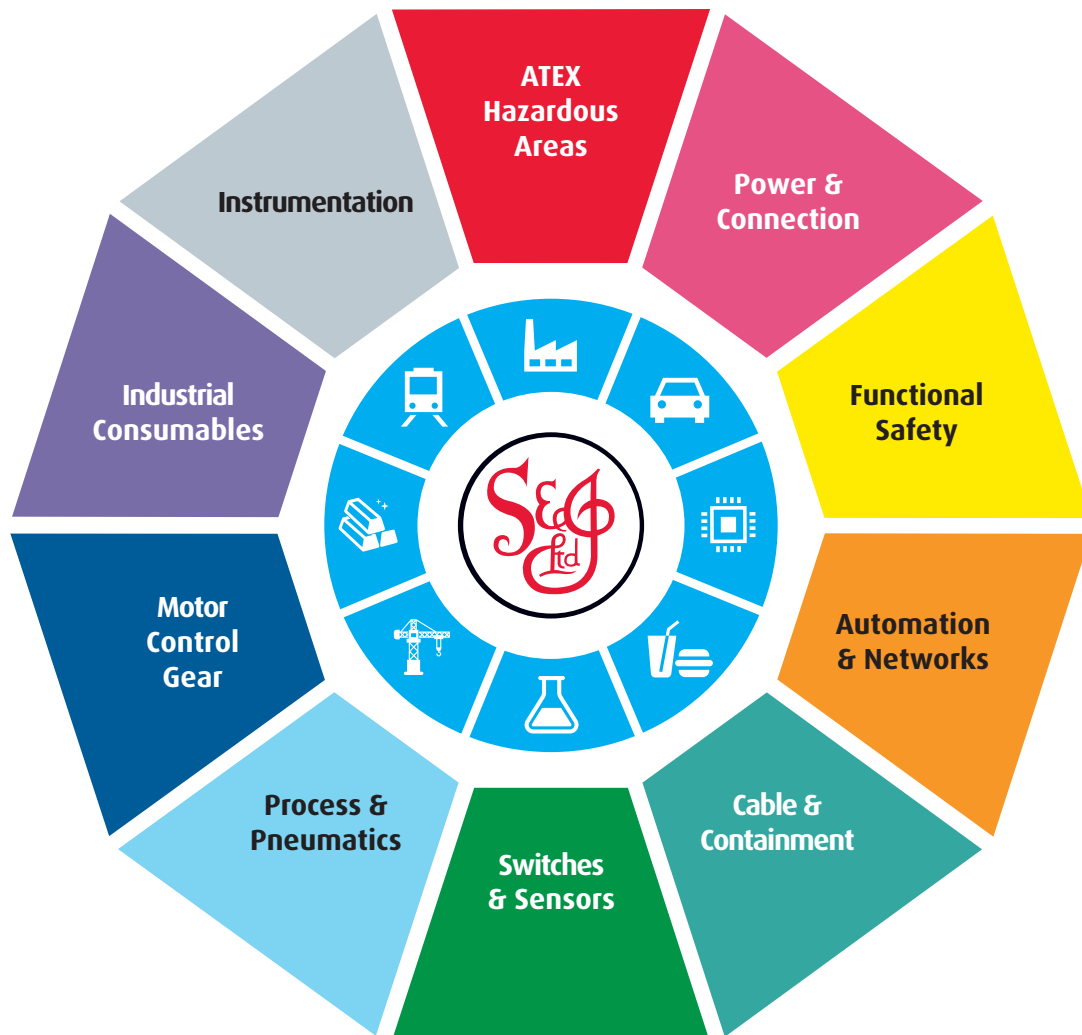
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