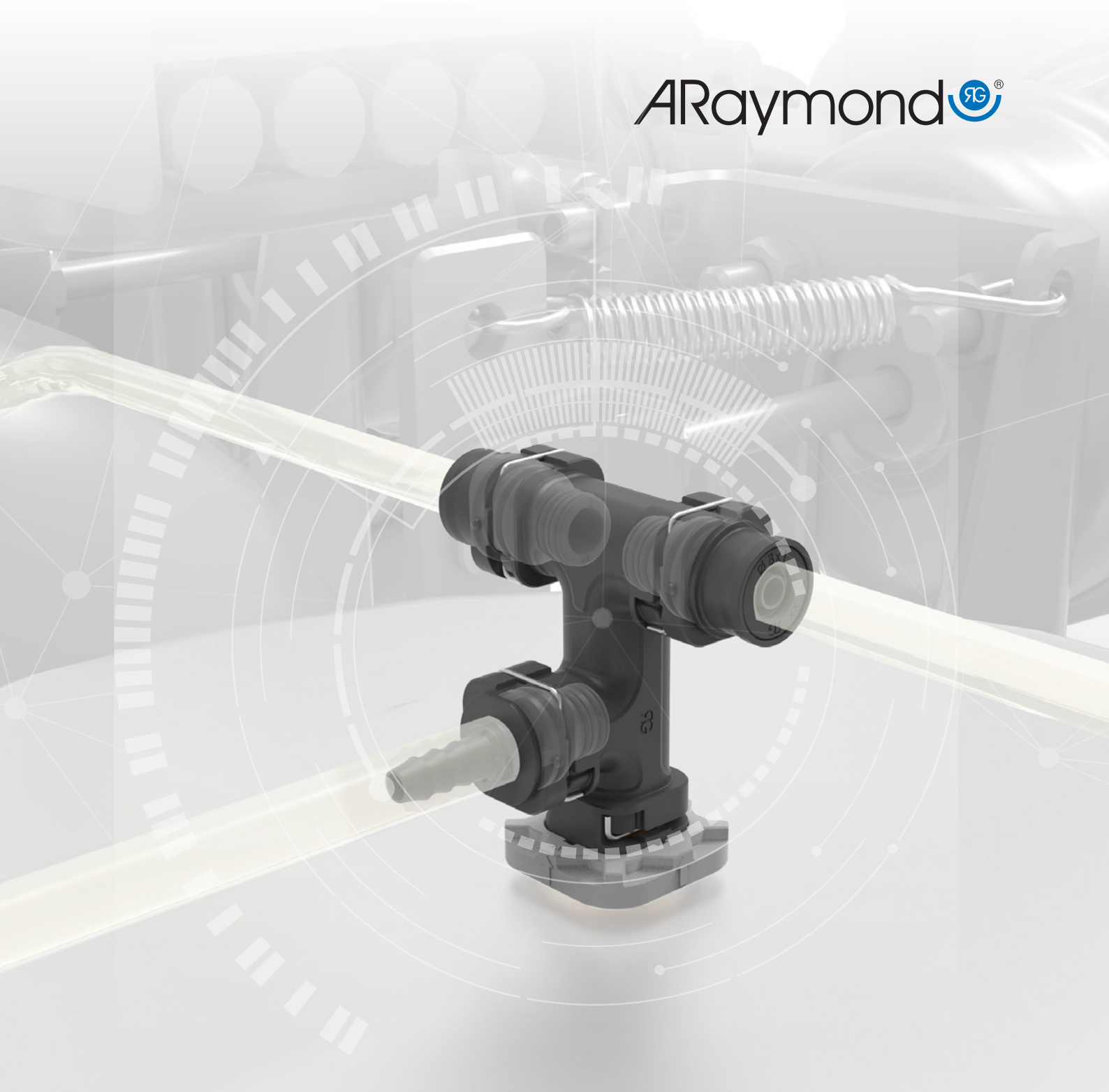




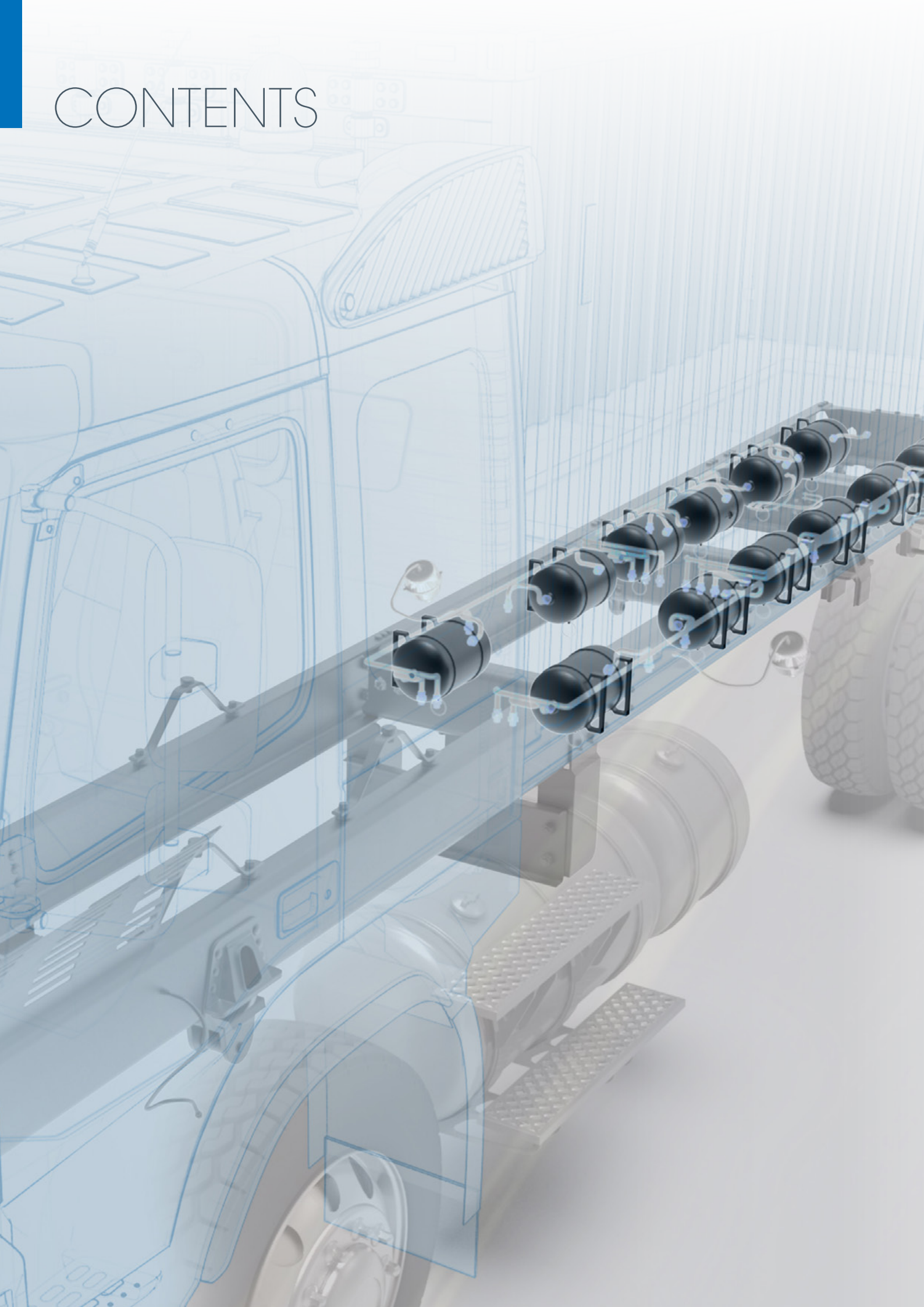
MOBILITY

PRODUCT CATALOG



# AIRYOSA™ PNEUMATIC SOLUTIONS

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# SAFE AND SEAMLESS PNEUMATIC SOLUTIONS FOR SIMPLIFIED INTEGRATION

Drawing on decades of fluid handling expertise, we develop pneumatic solutions that help commercial vehicle manufacturers **simplify integration, improve operator ergonomics,** and **support long-term vehicle performance.**



## ERGONOMIC AND EFFICIENT

Efficient and ergonomic pneumatic solutions that simplify installation, reduce rework and enhance operator comfort.



## LIGHTWEIGHT AND SUSTAINABLE

Eco-designed products to optimize weight, size and provide a choice of bio-based materials.



## SERVICEABLE AND DURABLE

Low insertion force, compact designs, and maintenance-friendly solutions that simplify assembly and service operations.



## A COMPREHENSIVE RANGE THROUGH A SINGLE PARTNER

Airyosa™ connectors, tubes, fasteners and advanced interface solutions—custom and off-the-shelf.



## ERGONOMIC AND EFFICIENT

INSERTION EFFORT REDUCED<sup>1</sup>

**~30%  
LESS EFFORT**  
for end-piece  
into Quick  
Connectors<sup>1</sup>.

**~15%  
LESS EFFORT**  
for tube into  
push-ins<sup>1</sup>.

**130** tube insertions  
**110** end-piece connections  
per standard truck assembly.

Commercial vehicle assembly requires operators to perform approximately **130 tube insertions** and **110 end-piece connections** per truck.

Airyosa™ pneumatic solutions combine safe connection technology performance with ergonomic design.

**Reduced insertion forces** make **assembly easier and simplifies installation**, particularly in confined or difficult-to-access areas.

The result is improved **operator comfort**, **greater assembly consistency**, and a lower likelihood of mis-assembly and costly rework.



<sup>1</sup>Compared to industry standards.



## LIGHTWEIGHT AND SUSTAINABLE

Airyosa™ pneumatic solutions are developed using eco-design principles, with a focus on **lightweight designs** and the use of **bio-based materials**.

Compared with industry standards, they are approximately **17% lighter**, helping reduce material consumption, fuel usage and carbon emissions.

**~17%**  
LOWER  
IN WEIGHT<sup>1</sup>

**~50%**  
REDUCTION  
IN CARBON  
EMISSIONS<sup>1</sup>



## SERVICEABLE AND DURABLE

Airyosa™ pneumatic solutions are designed to withstand dust, wear, and demanding commercial vehicle operating conditions.

**Maintenance** and **disassembly** can be performed **quickly** using dedicated or standard service tools, helping simplify servicing operations and maximize vehicle uptime.

Combined with durable product designs and **reliable connection technology**, Airyosa™ solutions help **support long-term system reliability** throughout the vehicle lifecycle.



<sup>1</sup> Compared to industry standards.

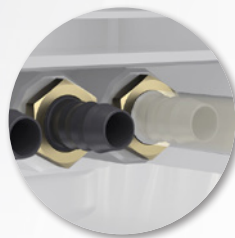


## A COMPREHENSIVE RANGE THROUGH A SINGLE PARTNER

### A TRUSTED PARTNER

Commercial vehicle architectures and performance requirements continue to grow in complexity. To help our customers address these evolving challenges, we offer a **comprehensive portfolio of pneumatic solutions designed to be combined for your exact needs.**

Partnering with us gives you access to a complete range of Airyosa™ connectors, tubes, fasteners and advanced interface solutions—custom and off-the-shelf.



### Global expertise, tailored solutions

With advanced engineering capabilities across 25 countries, we work closely with you from initial design through final delivery to create **tailored pneumatic solutions.**

### Smart and versatile designs

Backed by decades of fluid handling expertise and in-house proven manufacturing capabilities, we offer a diverse range of off-the-shelf pneumatic connector solutions.

### Streamlined integration

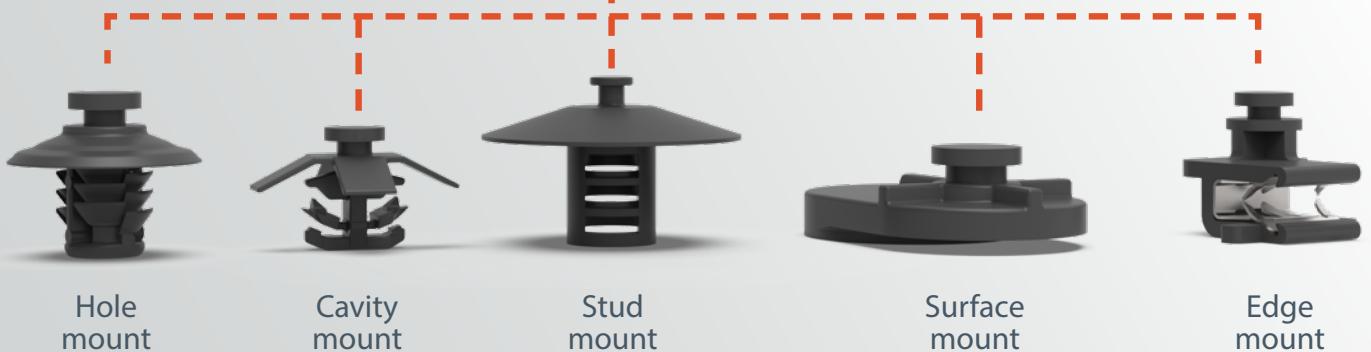
Our combined offer allows you to select the **ideal mix of custom and standard solutions.** Meet your vehicle architecture, integration, maintenance, and cost requirements with ease while ensuring full compliance with industry standards.

By consolidating your pneumatic solutions through a **single trusted partner,** you **simplify supply chain management, streamline procurement, quality assurance** and ensure consistent expert support throughout the entire vehicle lifecycle.

# ADVANCED FASTENING SOLUTIONS FOR PNEUMATIC SYSTEMS

Our fastening solutions designed for commercial vehicles ensure efficient integration, simplified servicing and dependable performance.

Leveraging our advanced engineering capabilities and proven manufacturing processes, we build reliable, compact and lightweight connection solutions that support our customers' long-term performance and sustainability objectives.



# AIRYOSA™

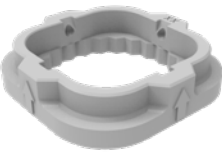
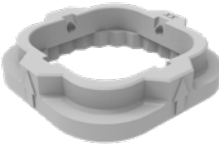
## CONNECTORS

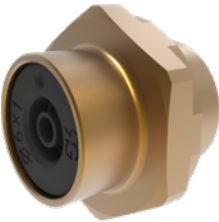
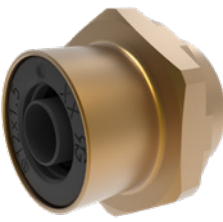
### STANDARD RANGE

#### KEY BENEFITS

- High-reliability connections.
- Reduced insertion force.
- Compact design.
- Lightweight.
- Easy integration.



|                    |                                                                                     |                                                                                     |                                                                                      |                                                                                       |
|--------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| QC                 | AR10-0010                                                                           | AR10-0020                                                                           | AR10-0030                                                                            | AR10-0050                                                                             |
|                    |    |    |    |    |
|                    | T-SHAPE                                                                             | F-SHAPE                                                                             | Y-SHAPE                                                                              | 45°                                                                                   |
|                    | AR10-0080                                                                           | AR10-0090                                                                           | AR10-0870 STRAIGHT                                                                   | AR10-1270 STRAIGHT                                                                    |
| THREADED END-PIECE |    |    |    |    |
|                    | 4 WAY                                                                               | 90°                                                                                 | Tube 8x1                                                                             | Tube 12x1.5                                                                           |
|                    | AR11-0020                                                                           | AR11-0030                                                                           | AR11-0040                                                                            | AR11-0060                                                                             |
|                    |  |  |  |  |
| ANTI-SWIVEL        | M12x1.5                                                                             | M14x1.5                                                                             | M16x1.5                                                                              | M22x1.5                                                                               |
|                    | AR12-0010                                                                           | AR12-0020                                                                           | AR12-0030                                                                            | AR12-0040                                                                             |
|                    |  |  |  |  |
|                    | HEX18                                                                               | HEX20                                                                               | HEX22                                                                                | HEX28                                                                                 |
| PUSH-IN            | AR13-0600                                                                           | AR13-0800                                                                           | AR13-1200                                                                            |                                                                                       |
|                    |  |  |  |                                                                                       |
|                    | Tube 6x1                                                                            | Tube 8x1                                                                            | Tube 12x1.5                                                                          |                                                                                       |
|                    |                                                                                     |                                                                                     |                                                                                      |                                                                                       |

|                            |                                                                                                            |                                                                                                               |                                                                                                                |                                                                                                                 |
|----------------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| QC with INTEGRATED PUSH-IN | AR14-0890                                                                                                  | AR14-1290                                                                                                     |                                                                                                                |                                                                                                                 |
|                            | <br>Tube 8x1              | <br>Tube 12x1.5              |                                                                                                                |                                                                                                                 |
| THREADED PUSH-IN           | AR15-0620                                                                                                  | AR15-0640                                                                                                     | AR15-0820                                                                                                      | AR15-0840                                                                                                       |
|                            | <br>Tube 6x1<br>M12x1.5   | <br>Tube 6x1<br>M16x1.5      | <br>Tube 8x1<br>M12x1.5      | <br>Tube 8x1<br>M16x1.5      |
|                            | AR15-0860                                                                                                  | AR15-1230                                                                                                     | AR15-1240                                                                                                      | AR15-1260                                                                                                       |
|                            | <br>Tube 8x1<br>M22x1.5 | <br>Tube 12x1.5<br>M14x1.5 | <br>Tube 12x1.5<br>M16x1.5 | <br>Tube 12x1.5<br>M22x1.5 |
|                            | AR16-0010                                                                                                  | AR16-0810                                                                                                     | AR16-1210                                                                                                      |                                                                                                                 |
|                            | <br>DOUBLE END-PIECE    | <br>Tube 8x1               | <br>Tube 12x1.5            |                                                                                                                 |

# AIRYOSA™ GRIP CONNECTORS FOR VALVES

**SAFE  
& FAST**  
ASSEMBLY

## AIRYOSA™ GRIP

|              |                                                                                     |                                                                                     |                                                                                      |                                                                                       |
|--------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| GRIP PUSH-IN | AR33-0010                                                                           | AR33-0610                                                                           | AR33-0810                                                                            | AR33-1220                                                                             |
|              |  |  |  |  |
|              | PLUG<br>Port 14.3                                                                   | Tube 6x1<br>Port 14.3                                                               | Tube 8x1<br>Port 14.3                                                                | Tube 12x1.5<br>Port 19.7                                                              |
|              | AR33-1530                                                                           |                                                                                     |                                                                                      |                                                                                       |
|              |  |                                                                                     |                                                                                      |                                                                                       |
|              | Tube 15x1.5<br>Port 25.4                                                            |                                                                                     |                                                                                      |                                                                                       |

# CUSTOM SOLUTIONS FOR ADVANCED VALVE INTERFACES

Custom-designed solutions tailored for unique and challenging pneumatic integration requirements.

From concept development to industrialization, we work alongside you to design smart interface solutions that simplify integration and optimize vehicle performance objectives.

## KEY BENEFITS

- Ergonomic and sustainable solutions.
- Seamless and simple integration.
- Outstanding fluid connections and safety.



# AIRYOSA™ CLICK

These connectors combine advanced lightweight materials with a compact and robust design.

Engineered for applications where maintenance and reusability are essential, they provide safe connection performance while enabling easy disassembly.

## KEY BENEFITS

- Easy disassembly for simplified maintenance and greater reusability.
- Compact and robust design.
- Lightweight plastic end-pieces.
- Enhanced ARaymond fir-tree profile.

AIRYOSA™  
ADAPTORS



AIRYOSA™ CLICK  
END-PIECE



AIRYOSA™ CLICK  
THREADED QC



PATENTED



AIRYOSA™ CLICK  
RELEASE TOOL



# AIRYOSA™ SNAP

Our connectors provide a safe, compact, and easy-to-install connection solution.

Designed for streamlined assembly, they enable fast plug-and-play integration while maintaining robust connection performance.

AIRYOSA™ SNAP  
END-PIECES



AIRYOSA™  
ADAPTORS



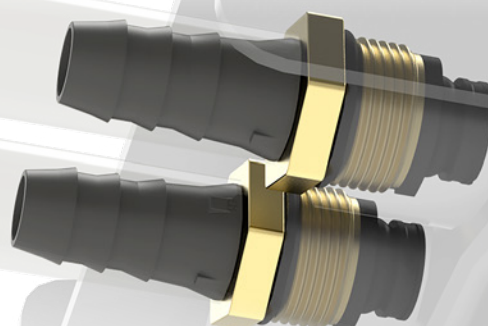
AIRYOSA™ SNAP  
THREADED QC



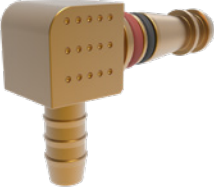
COMPATIBLE  
WITH  
MARKET  
STANDARDS

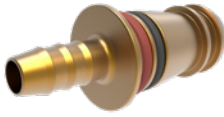
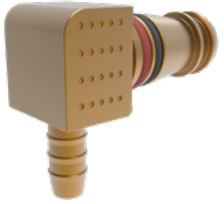
## KEY BENEFITS

- Compact design.
- Plug-and-play assembly.
- Lightweight plastic end-pieces.
- Proprietary ARaymond fir-tree profile.

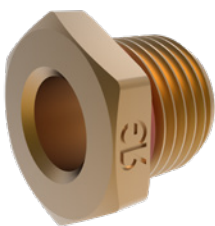


# AIRYOSA™ CLICK RG8

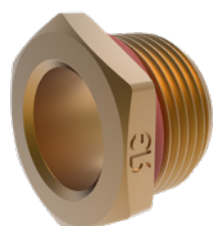
| THREAD  | AR80-0040                                                                                        |                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| M16x1.5 | <br>Threaded QC |                                                                                                  |
| TUBE    | AR81-0670 STRAIGHT                                                                               | AR81-0690 90°                                                                                    |
| 6x1     | <br>End-Piece   | <br>End-Piece   |
| TUBE    | AR81-0870 STRAIGHT                                                                               | AR81-0890 90°                                                                                    |
| 8x1     | <br>End-Piece | <br>End-Piece |

| THREAD  | AR82-0060                                                                                            |                                                                                                      |                                                                                                       |                                                                                                        |
|---------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| M22x1.5 |  <p>Threaded QC</p> |                                                                                                      |                                                                                                       |                                                                                                        |
| TUBE    | AR83-0871 STRAIGHT                                                                                   | AR83-0870 STRAIGHT                                                                                   | AR83-0891 90°                                                                                         | AR83-0890 90°                                                                                          |
| 8x1     |  <p>End-Piece</p>   |  <p>End-Piece</p>   |  <p>End-Piece</p>   |  <p>End-Piece</p>   |
| TUBE    | AR83-1271 STRAIGHT                                                                                   | AR83-1270 STRAIGHT                                                                                   | AR83-1291 90°                                                                                         | AR83-1290 90°                                                                                          |
| 12x1.5  |  <p>End-Piece</p> |  <p>End-Piece</p> |  <p>End-Piece</p> |  <p>End-Piece</p> |
| TUBE    | AR83-1571 STRAIGHT                                                                                   | AR83-1570 STRAIGHT                                                                                   | AR83-1591 90°                                                                                         | AR83-1590 90°                                                                                          |
| 15x1.5  |  <p>End-Piece</p> |  <p>End-Piece</p> |  <p>End-Piece</p> |  <p>End-Piece</p> |

## AIRYOSA™ SNAP NG8

|         |                                                                                                  |                                                                                                  |                                                                                                   |                                                                                                    |
|---------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| TUBE    | AR70-0040                                                                                        |                                                                                                  |                                                                                                   |                                                                                                    |
| M16x1.5 | <br>Threaded QC |                                                                                                  |                                                                                                   |                                                                                                    |
| 6x1     | TUBE                                                                                             | AR71-0670 STRAIGHT                                                                               | AR71-0690 90°                                                                                     |                                                                                                    |
|         | <br>End-Piece   | <br>End-Piece   |                                                                                                   |                                                                                                    |
| 8x1     | TUBE                                                                                             | AR71-0871 STRAIGHT                                                                               | AR71-0870 STRAIGHT                                                                                | AR71-0891 90°                                                                                      |
|         | <br>End-Piece | <br>End-Piece | <br>End-Piece | <br>End-Piece |
|         |                                                                                                  |                                                                                                  |                                                                                                   |                                                                                                    |
|         |                                                                                                  |                                                                                                  |                                                                                                   |                                                                                                    |

## AIRYOSA™ SNAP NG12

|         |                                                                                                    |  |      |                                                                                                   |                                                                                                    |
|---------|----------------------------------------------------------------------------------------------------|--|------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| TUBE    | AR72-0060                                                                                          |  | TUBE | AR73-0670 STRAIGHT                                                                                | AR73-0690 90°                                                                                      |
| M22x1.5 | <br>Threaded QC |  | 6x1  | <br>End-Piece | <br>End-Piece |

# AIRYOSA™ SNAP NG12

| TUBE   | AR73-0871 STRAIGHT                                                                                             | AR73-0870 STRAIGHT                                                                                             | AR73-0891 90°                                                                                     | AR73-0890 90°                                                                                      |
|--------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 8x1    | <br>End-Piece                 | <br>End-Piece                 | <br>End-Piece   | <br>End-Piece   |
| TUBE   | AR73-1271 STRAIGHT                                                                                             | AR73-1270 STRAIGHT                                                                                             | AR73-1291 90°                                                                                     | AR73-1290 90°                                                                                      |
| 12x1.5 | <br>End-Piece                 | <br>End-Piece                 | <br>End-Piece   | <br>End-Piece   |
|        | <b>AR73-1279</b>                                                                                               | <b>AR73-1299 90°</b>                                                                                           |                                                                                                   |                                                                                                    |
|        | <br>Test Point<br>End-Piece | <br>Test Point<br>End-Piece |                                                                                                   |                                                                                                    |
| TUBE   | AR73-1571 STRAIGHT                                                                                             | AR73-1570 STRAIGHT                                                                                             | AR73-1591 90°                                                                                     | AR73-1590 90°                                                                                      |
| 15x1.5 | <br>End-Piece               | <br>End-Piece               | <br>End-Piece | <br>End-Piece |
|        | <b>AR73-1579</b>                                                                                               | <b>AR73-1599 90°</b>                                                                                           |                                                                                                   |                                                                                                    |
|        | <br>Test Point<br>End-Piece | <br>Test Point<br>End-Piece |                                                                                                   |                                                                                                    |

# ADAPTORS

| TUBE   | AR43-0600                                                                                          |                                                                                                    |                                                                                                                      |                                                                                                                       |                                                                                                                         |
|--------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 6x1    |  <p>T-SHAPE</p>   |                                                                                                    |                                                                                                                      |                                                                                                                       |                                                                                                                         |
| TUBE   | AR43-0800                                                                                          | AR43-0801                                                                                          | AR43-0810                                                                                                            | AR43-0820                                                                                                             | AR43-0830                                                                                                               |
| 8x1    |  <p>T-SHAPE</p>   |  <p>T-SHAPE</p>   |  <p>T-SHAPE<br/>With tube 6x1</p>   |  <p>T-SHAPE<br/>With tube 6x1</p>   |  <p>T-SHAPE<br/>With tube 12x1.5</p> |
| TUBE   | AR43-1200                                                                                          | AR43-1201                                                                                          | AR43-1211                                                                                                            | AR43-1221                                                                                                             | AR43-1230                                                                                                               |
| 12x1.5 |  <p>T-SHAPE</p> |  <p>T-SHAPE</p> |  <p>T-SHAPE<br/>With tube 8x1</p> |  <p>T-SHAPE<br/>With tube 8x1</p> |  <p>T-SHAPE<br/>With tube 6x1</p>  |
| TUBE   | AR43-1500                                                                                          | AR43-1501                                                                                          | AR43-1510                                                                                                            |                                                                                                                       |                                                                                                                         |
| 15x1.5 |  <p>T-SHAPE</p> |  <p>T-SHAPE</p> |  <p>T-SHAPE<br/>With tube 8x1</p> |                                                                                                                       |                                                                                                                         |

# DKOs, BULKHEADS & PTFC

| TUBE     |  | AR44-0606                                                                           | STRAIGHT | AR44-1008                                                                         | STRAIGHT | AR44-0809                                                                         | STRAIGHT | AR44-1212                                                                          | STRAIGHT |                                                                                     |               |  |
|----------|--|-------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------|---------------|--|
| DKO      |  |    |          |  |          |  |          |  |          |                                                                                     |               |  |
|          |  | DKO L6<br>Tube 6x1                                                                  |          | DKO L8<br>Tube 10x1                                                               |          | DKO L9<br>Tube 8x1                                                                |          | DKO L12<br>Tube 12x1.5                                                             |          |                                                                                     |               |  |
|          |  |                                                                                     |          |                                                                                   |          |                                                                                   |          |                                                                                    |          |                                                                                     |               |  |
| TUBE     |  | AR45-0840                                                                           | STRAIGHT | AR45-0841                                                                         | 90°      | AR45-1250                                                                         | STRAIGHT | AR45-1251                                                                          | 90°      | AR45-1252                                                                           | 3 WAY T SHAPE |  |
| BULKHEAD |  |    |          |  |          |  |          |  |          |  |               |  |
|          |  | M16x1.5<br>Tube 8x1                                                                 |          | M16x1.5<br>Tube 8x1                                                               |          | M18x1.5<br>Tube 12x1.5                                                            |          | M18x1.5<br>Tube 12x1.5                                                             |          | M18x1.5<br>Tube 12x1.5                                                              |               |  |
|          |  |                                                                                     |          |                                                                                   |          |                                                                                   |          |                                                                                    |          |                                                                                     |               |  |
|          |  | AR45-1551                                                                           | 90°      |                                                                                   |          |                                                                                   |          |                                                                                    |          |                                                                                     |               |  |
|          |  |  |          |                                                                                   |          |                                                                                   |          |                                                                                    |          |                                                                                     |               |  |
|          |  | M18x1.5<br>Tube 15x1.5                                                              |          |                                                                                   |          |                                                                                   |          |                                                                                    |          |                                                                                     |               |  |
|          |  |                                                                                     |          |                                                                                   |          |                                                                                   |          |                                                                                    |          |                                                                                     |               |  |
| TUBE     |  | AR46-0850                                                                           | 135°     |                                                                                   |          |                                                                                   |          |                                                                                    |          |                                                                                     |               |  |
| PTFC     |  |  |          |                                                                                   |          |                                                                                   |          |                                                                                    |          |                                                                                     |               |  |
|          |  | Tube 8x1                                                                            |          |                                                                                   |          |                                                                                   |          |                                                                                    |          |                                                                                     |               |  |

# AIRYOSA™ TUBES

## OPTIMAL FOR COMMERCIAL VEHICLE APPLICATION

Our extensive tube portfolio is ideal for a wide range of commercial vehicle applications, including braking systems, air suspensions, and other fluid handling systems.

### HIGH-TECH PLASTICS

Crafted from advanced materials like polyamides (PA 10.12, PA 11, PA 12) for superior performance.

### VERSATILE DESIGNS

Available either smooth or corrugated with mono or multi-layer structures.

### SUPERIOR PRODUCTION

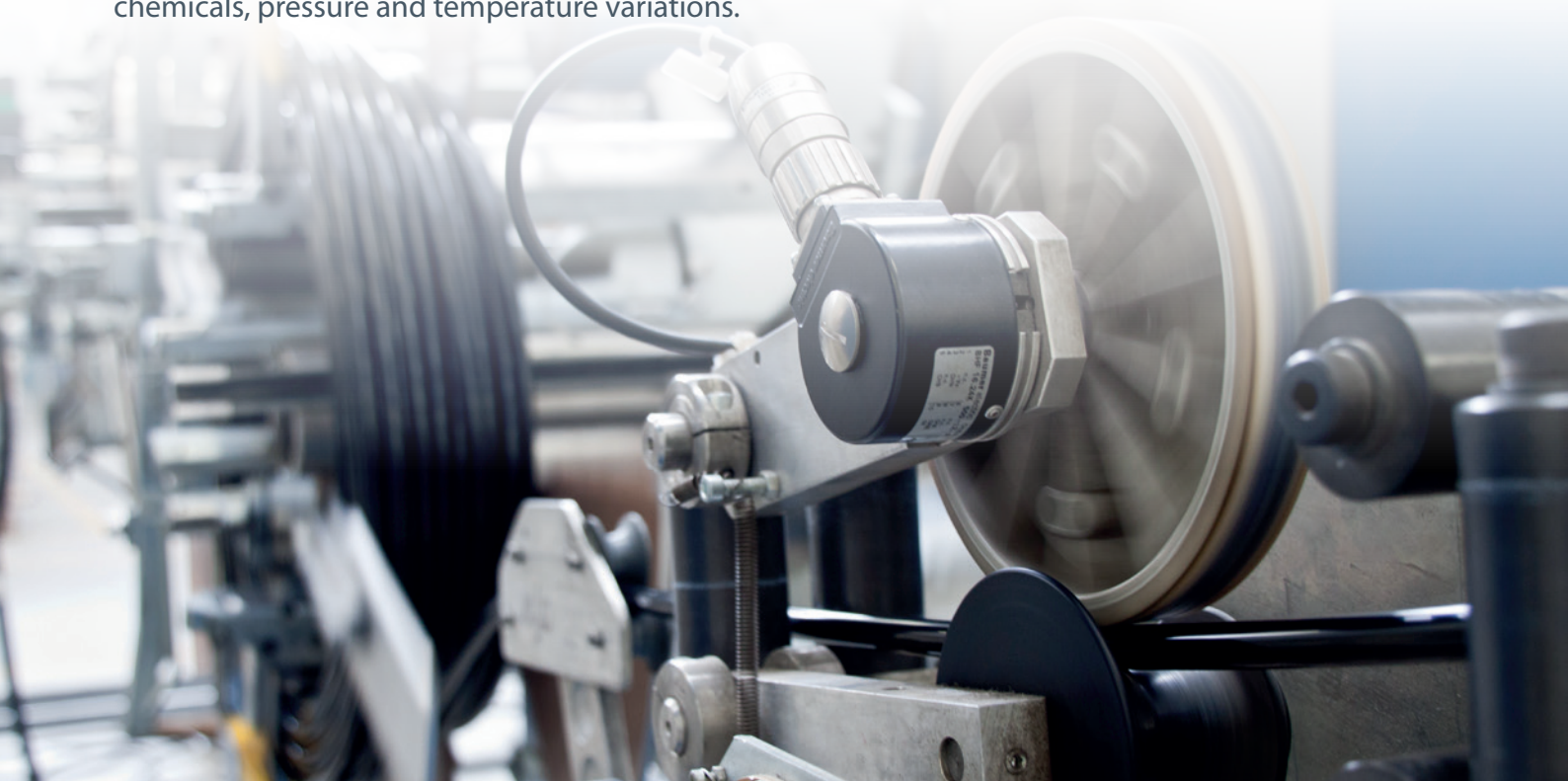
Our advanced manufacturing processes ensure durability, flexibility, and resistance to chemicals, pressure and temperature variations.

### TAILORED TO MULTI-LAYER TUBES

We offer custom solutions for multi-layer tubes to meet your exact requirements.

### COMPREHENSIVE ASSEMBLY SOLUTIONS

Specialized thermoforming and assembly solutions for coils are also available to complete your setup.





Airyosa™ 11 tubes are produced using a fully bio-sourced polymer named Polyamide 11 (PA11).

Airyosa™ 11 tubes fulfill all requirements of the well-known standards DIN 73378 and DIN 74324.

Airyosa™ 11 tubes are mainly used in low temperature application below -40°C or when long term resistance to high temperature is required.

All dimensions in mm / Other dimensions and variants on request.

| External Ø<br>(mm) | Internal Ø<br>(mm) | Thickness<br>(mm) | Bend radius*<br>(mm) | Burst pressure at 23°C in bar |       |     | Norm        |           |
|--------------------|--------------------|-------------------|----------------------|-------------------------------|-------|-----|-------------|-----------|
|                    |                    |                   |                      | HL**                          | PHLY  | PHL | DIN 74324** | DIN 73378 |
| 4                  | 2                  | 1                 | 20                   | 267                           | 180   | 135 | o           | o         |
| 4                  | 2,3                | 0,85              | 19                   | 216                           | 147   | 108 |             | o         |
| 4                  | 2,5                | 0,75              | 19                   | 186                           | 126   | 93  |             | o         |
| 5                  | 3                  | 1                 | 25                   | 201                           | 135   | 99  |             | o         |
| 6                  | 2                  | 2                 | 31                   | 399                           | 270   | 201 |             | o         |
| 6                  | 3                  | 1,5               | 31                   | 267                           | 180   | 132 |             | o         |
| 6                  | 4                  | 1                 | 30                   | 159                           | 108   | 81  | o           | o         |
| 8                  | 4                  | 2                 | 43                   | 267                           | 180   | 132 |             | o         |
| 8                  | 5                  | 1,5               | 43                   | 186                           | 126   | 93  |             | o         |
| 8                  | 5,5                | 1,25              | 43                   | 147                           | 99    | 75  |             | o         |
| 8                  | 6                  | 1                 | 40                   | 114                           | 78    | 57  | o           | o         |
| 9                  | 6                  | 1,5               | 45                   | 159                           | 108   | 81  | o           | o         |
| 10                 | 7                  | 1,5               | 55                   | 141                           | 95    | 70  |             |           |
| 10                 | 7,5                | 1,25              | 60                   | 114                           | 78    | 57  | o           | o         |
| 10                 | 8                  | 1                 | 60                   | 90                            | 45*** | 45  | o           | o         |
| 11                 | 8                  | 1,5               | 60                   | 126                           | 84    | 63  | o           | o         |
| 12                 | 8                  | 2                 | 67                   | 159                           | 108   | 81  |             | o         |
| 12                 | 9                  | 1,5               | 60                   | 114                           | 78    | 57  | o           | o         |
| 12,5               | 10                 | 1,25              | 70                   | 90                            | 60    | 45  |             | o         |
| 14                 | 10                 | 2                 | 75                   | 132                           | 90    | 66  | o           | o         |
| 15                 | 12                 | 1,5               | 90                   | 90                            | 45*** | 45  | o           | o         |
| 15                 | 13                 | 1                 | 85                   | 57                            | 39    | 30  |             | o         |
| 16                 | 12                 | 2                 | 95                   | 114                           | 78    | 57  | o           | o         |
| 18                 | 14                 | 2                 | 100                  | 99                            | 51*** | 51  | o           | o         |
| 20                 | 16                 | 2                 | 115                  | 90                            | 60    | 45  |             | o         |

## TOLERANCES

The tolerances on external diameter, according to DIN 73378, are:

- External diameter from 4 to 10 mm  $\pm 0,1$  mm, except for:

8x4 / 9x6 mm  $\pm 0,15$  10x7,5 mm  $\pm 0,12$

- External diameter from 11 to 20 mm  $\pm 0,15$

Tubes with narrow tolerances can be provided upon demand.

## USE TEMPERATURE

-60°C / +130°C (according to DIN 73378)

For DIN 74324 temperature range varies per diameters  
(For more details, please contact us).

\* Data to be confirmed based on application and test method.

\*\* HL grade not part of DIN 74324.

\*\*\* Value based on DIN 74324.

## MARKING

| DIN 73378 | 8x1mm                           | PA11PHLY     | C.BIO        | 07001485-18-134-14:51 |
|-----------|---------------------------------|--------------|--------------|-----------------------|
| ↓         | ↓                               | ↓            | ↓            | ↓                     |
| Standard  | External diameter for thickness | Raw material | Product name | Batch number          |



Airyosa™ 12 tubes are made of Polyamide 12 (PA12), a polyvalent material, derived from petroleum.

Airyosa™ 12 tubes are fully compliant with DIN 73378 and DIN 74324 standards.

All dimensions in mm / Other dimensions and variants on request.

| External Ø<br>(mm) | Internal Ø<br>(mm) | Thickness<br>(mm) | Bend radius*<br>(mm) | Burst pressure at 23°C in bar |       |       |     | Norm        |           |
|--------------------|--------------------|-------------------|----------------------|-------------------------------|-------|-------|-----|-------------|-----------|
|                    |                    |                   |                      | HL**                          | PHLY  | HIPHL | PHL | DIN 74324** | DIN 73378 |
| 4                  | 2                  | 1                 | 20                   | 267                           | 180   | 147   | 135 | o           | o         |
| 4                  | 2,3                | 0,85              | 19                   | 216                           | 147   | 120   | 108 |             | o         |
| 4                  | 2,5                | 0,75              | 19                   | 186                           | 126   | 102   | 93  |             | o         |
| 5                  | 3                  | 1                 | 25                   | 201                           | 135   | 111   | 99  |             | o         |
| 6                  | 2                  | 2                 | 31                   | 399                           | 270   | 219   | 201 |             | o         |
| 6                  | 3                  | 1,5               | 31                   | 267                           | 180   | 147   | 132 |             | o         |
| 6                  | 4                  | 1                 | 30                   | 159                           | 108   | 87    | 81  | o           | o         |
| 8                  | 4                  | 2                 | 43                   | 267                           | 180   | 147   | 132 |             | o         |
| 8                  | 5                  | 1,5               | 43                   | 186                           | 126   | 102   | 93  |             | o         |
| 8                  | 5,5                | 1,25              | 43                   | 147                           | 99    | 81    | 75  |             | o         |
| 8                  | 6                  | 1                 | 40                   | 114                           | 78    | 63    | 57  | o           | o         |
| 9                  | 6                  | 1,5               | 45                   | 159                           | 108   | 87    | 81  | o           | o         |
| 10                 | 7                  | 1,5               | 55                   | 141                           | 95    | 77    | 70  |             |           |
| 10                 | 7,5                | 1,25              | 60                   | 114                           | 78    | 63    | 57  | o           | o         |
| 10                 | 8                  | 1                 | 60                   | 90                            | 45*** | 48    | 45  | o           | o         |
| 11                 | 8                  | 1,5               | 60                   | 126                           | 84    | 69    | 63  | o           | o         |
| 12                 | 8                  | 2                 | 67                   | 159                           | 108   | 87    | 81  |             | o         |
| 12                 | 9                  | 1,5               | 60                   | 114                           | 78    | 63    | 57  | o           | o         |
| 12,5               | 10                 | 1,25              | 70                   | 90                            | 60    | 48    | 45  |             | o         |
| 14                 | 10                 | 2                 | 75                   | 132                           | 90    | 72    | 66  | o           | o         |
| 15                 | 12                 | 1,5               | 90                   | 90                            | 45*** | 48    | 45  | o           | o         |
| 15                 | 13                 | 1                 | 85                   | 57                            | 39    | 30    | 30  |             | o         |
| 16                 | 12                 | 2                 | 95                   | 114                           | 78    | 63    | 57  | o           | o         |
| 18                 | 14                 | 2                 | 100                  | 99                            | 51*** | 54    | 51  | o           | o         |
| 20                 | 16                 | 2                 | 115                  | 90                            | 60    | 48    | 45  |             | o         |

## TOLERANCES

The tolerances on external diameter, according to DIN 73378, are:  
 - External diameter from 4 to 10 mm  $\pm 0,1$  mm, except for:  
   8x4 / 9x6 mm  $\pm 0,15$    10x7,5 mm  $\pm 0,12$   
 - External diameter from 11 to 20 mm  $\pm 0,15$   
 Tubes with narrow tolerances can be provided upon demand.

## USE TEMPERATURE

-60°C / +130°C (according to DIN 73378)  
 For DIN 74324 temperature range varies per diameters  
 (For more details, please contact us).

\* Data to be confirmed based on application and test method.

\*\* HL grade not part of DIN 74324.

\*\*\* Value based on DIN 74324.

## MARKING

| ISO 7628 | 8x1mm                           | PA12PHLY     | C.BEST       | 07001485-18-134-14:51 |
|----------|---------------------------------|--------------|--------------|-----------------------|
| ↓        | ↓                               | ↓            | ↓            | ↓                     |
| Standard | External diameter for thickness | Raw material | Product name | Batch number          |



Airyosa™ 10.12 tubes are produced with a very innovative bio-sourced polymer named polyamide 10.12 (PA 10.12).

Developed to overcome PA12 and PA11 shortages, Airyosa™ 10.12 tubes comply fully with ISO 7628-2010 standard and fulfill the requirements of DIN 73378 and 74324.

Widely used in the automotive sector for years, Airyosa™ 10.12 tubes have similar characteristics to PA12 or PA11 with excellent resistance to impact at -40°C and very good behavior above 125°C.

All dimensions in mm / Other dimensions and variants on request.

| External Ø (mm) | Internal Ø (mm) | Thickness (mm) | Bend radius* (mm) | Burst pressure at 23°C in bar |      |     | Norm     |
|-----------------|-----------------|----------------|-------------------|-------------------------------|------|-----|----------|
|                 |                 |                |                   | HL                            | PHLY | PHL | ISO 7628 |
| 4               | 2               | 1              | 20                | 266                           | 180  | 147 | o        |
| 6               | 4               | 1              | 30                | 160                           | 108  | 88  | o        |
| 8               | 6               | 1              | 40                | 114                           | 77   | 63  | o        |
| 9               | 6               | 1,5            | 45                | 160                           | 108  | 88  | o        |
| 10              | 7,5             | 1,25           | 60                | 114                           | 77   | 63  | o        |
| 10              | 8               | 1              | 60                | 88                            | 60   | 49  | o        |
| 11              | 8               | 1,5            | 60                | 126                           | 85   | 69  | o        |
| 12              | 9               | 1,5            | 60                | 114                           | 77   | 63  | o        |
| 14              | 10              | 2              | 75                | 133                           | 90   | 73  | o        |
| 15              | 12              | 1,5            | 90                | 88                            | 60   | 49  | o        |
| 16              | 12              | 2              | 95                | 114                           | 77   | 63  | o        |
| 18              | 14              | 2              | 100               | 100                           | 68   | 55  | o        |
| 19              | 15              | 2              | 109               | 94                            | 64   | 52  | o        |

## BURST PRESSURE ASSOCIATED WITH ISO CLASS

| Class | Operating pressure (bar) | Temperature |     | Burst pressure (bar) |      |        |      |
|-------|--------------------------|-------------|-----|----------------------|------|--------|------|
|       |                          | Min         | Max | 23°                  | 80°  | 100°   | 125° |
| 0     | 10                       | -40         | 80  | > 40                 | > 25 | -      | -    |
| 1     | 10                       | -40         | 100 | > 40                 | > 25 | > 25   | -    |
| 2     | 12.5                     | -40         | 100 | > 50                 | -    | > 31.3 | -    |
| 3     | 12.5                     | -40         | 125 | > 50                 | -    | > 31.3 | > 25 |

## TOLERANCES

The tolerances on external diameter, according to ISO 7628-2010, are:

- External diameter from 4 to 10 mm: +/- 0,10 mm

- External diameter from 11 to 19 mm : +/- 0,15 mm

Upon special request tubes with narrow tolerances.

## USE TEMPERATURE

According ISO 7628.

\* Data to be confirmed based on application and test method.

## MARKING

| ISO 7628 | CAT.1            | 8x1mm                           | PA1012HL     | C.PRO        | 07001485-18-134-14:51 |
|----------|------------------|---------------------------------|--------------|--------------|-----------------------|
| ↓        | ↓                | ↓                               | ↓            | ↓            | ↓                     |
| Standard | Product category | External diameter for thickness | Raw material | Product name | Batch number          |



Airyosa™ MLT tubes are produced using state-of-the-art multilayer extrusion technology.

They fully comply with ISO 7628-2010 standards and are a very cost-effective alternative to PA12 or PA11 tubes.

Developed for air brake applications using quick connectors, Airyosa™ MLT 533 tubes are available in black only.

## AIRYOSA™ MLT 533

All dimensions in mm / Other dimensions and variants on request.

| External Ø (mm) | Internal Ø (mm) | Thickness (mm) | Bend radius* (mm) | Burst pressure at 23°C in bar | Norm ISO 7628 |
|-----------------|-----------------|----------------|-------------------|-------------------------------|---------------|
| 6               | 4               | 1              | 30                | 94                            | o             |
| 8               | 6               | 1              | 40                | 71                            | o             |
| 10              | 8               | 1              | 60                | 55                            | o             |
| 12              | 9               | 1.5            | 60                | 82                            | o             |
| 15              | 12              | 1.5            | 90                | 53                            | o             |

## BURST PRESSURE ASSOCIATED WITH ISO CLASS

| Class | Operating pressure (bar) | Temperature |     | Burst pressure (bar) |      |        |      |
|-------|--------------------------|-------------|-----|----------------------|------|--------|------|
|       |                          | Min         | Max | 23°                  | 80°  | 100°   | 125° |
| 0     | 10                       | -40         | 80  | > 40                 | > 25 | -      | -    |
| 1     | 10                       | -40         | 100 | > 40                 | > 25 | > 25   | -    |
| 2     | 12.5                     | -40         | 100 | > 50                 | -    | > 31.3 | -    |
| 3     | 12.5                     | -40         | 125 | > 50                 | -    | > 31.3 | > 25 |

## TOLERANCES

The tolerances on external diameter, according to ISO 7628-2010, are:

- External diameter from 6 mm to 10 mm  $\pm 0,1$  mm
- External diameter from 12 mm to 15 mm  $\pm 0,15$  mm

Upon special request tubes with narrow tolerances.

## USE TEMPERATURE

According ISO 7628.

\*Data to be confirmed based on application and test method.

## MARKING

| ISO 7628 | CAT.2            | 12x1.5mm                        | PA12/PA6/PA12 | C.MLT 533    | 04002154-18-154-09:27 |
|----------|------------------|---------------------------------|---------------|--------------|-----------------------|
| ↓        | ↓                | ↓                               | ↓             | ↓            | ↓                     |
| Standard | Product category | External diameter for thickness | Raw material  | Product name | Batch number          |

**BASED ON CUSTOMER SPECIFICATIONS,  
OTHER AIRYOSA™ MLT STRUCTURES CAN BE DEVELOPED.**

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## SINGLE ROLLS

We offer a wide range of solutions for the packaging of our products to satisfy all market needs. Depending on their sizes, the hoses can be wound in rolls or in large coils on wooden or plastic supports. standard rolls are available in 25 mt, 50 mt, 100 mt. Other sizes are available upon request.



## BOXES

Boxes are specially designed for the supply of small quantities. Available in 3 different sizes (255 x 255 x 70 mm, 300 x 300 x 80 mm, 400 x 400 x 110 mm), depending on the material and the dimensions of the tubes to be contained, they can include 25, 50 and 100 meter rolls.

## DRUMS

Upon customer request, we can deliver our tubes wound on drums. Standard drums are made of wood or plastic. Upon special request, tube delivery can be organized on cardboard drums. More information on drum sizes and tube length per drum can be found on our website.



## COILS



The brake coil is a fundamental component that allows you to safely extend braking power from the tractor to the trailer at any time. Airyosa™ Coils are suitable for all commercial vehicles, providing excellent durability, exceptional flexibility and high resistance to weather and chemical agents such as lubricants and fuels. Airyosa™ Coils are marked with DIN 73378 or DIN 74324 or ISO 7628 (tube norms). Marking according to DIN 74323 or ISO 7375 or other norms can be developed upon request.

| Material    | Ø (mm) | Color                | Nr. of turns | Tails         | Fittings        | Mandrel |
|-------------|--------|----------------------|--------------|---------------|-----------------|---------|
| PA 12 HIPHL | 12x9   | Red / Yellow / Black | 17           | 2 x 125 mm    | M16 - M18 - M22 | 100     |
| PA 12 HIPHL | 12x9   | Red / Yellow / Black | 21           | 2 x 100 mm    | M16 - M18 - M22 | 75      |
| PA 12 HIPHL | 12x9   | Red / Yellow         | 7            | 200 x 2500 mm | -               | 75      |

Other configurations possible on demand, depending on volumes.

# ARAYMOND, AROUND THE WORLD



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