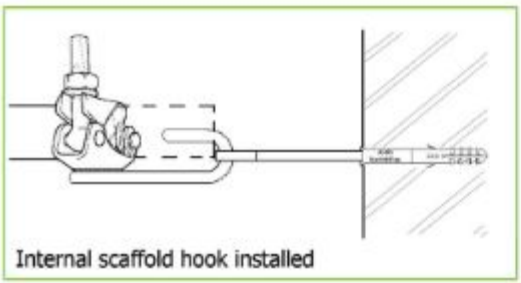
Alternative tying systems

# Apollo Scaffold Hooks

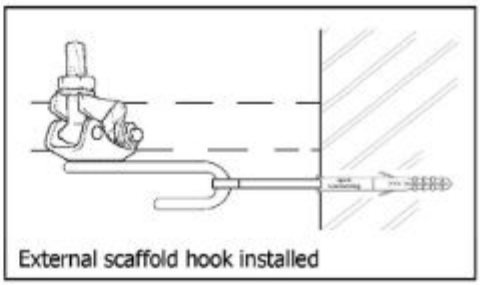
**Developed by Apollo in 1999**
**for connecting onto scaffold screws**
**Quality designed hooks with a 22 mm working tolerance**

APOLLO
Developers of the range of Apollo scaffolding ties

## Installations of the external and Internal scaffolding hooks



Internal scaffold hook installed

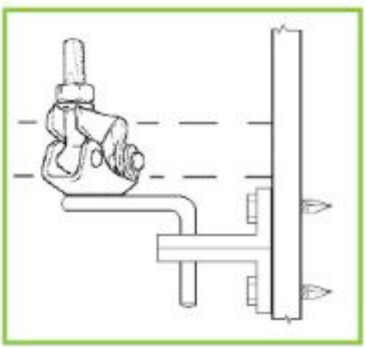


External scaffold hook installed

**The 'Eco90 degree' scaffold hook as illustrated on the right is produced for;**

1. Across a cavity applications

Designed for connecting onto either the cladding bracket system, illustrated on the right, or scaffold screws in 'across the cavity' applications.
The hook is easily disconnected from the bracket by moving the tube approximately 80 mm upwards, downwards or to either side.



The above illustrations shows the 'Eco90 degree' bend scaffold hook, installed into a twin fix cladding bracket. Should the 90 degree connection not be immediately above the connection hole then the safe working load reduces. If your punching tube is off ledgers then you will have to re-fix. Or hope your loads are no greater than 5 kN, maybe less. If your off standards then your ok; provided you notice it and carry out remedial works by adjusting the position of the punching tube.

**Innovative, creative,**
**simple but efficient**

Another original design from Apollo,

The Apollo extended Internal Hook
It allows safe checking on both sides.

Available to order. **On your door step within 3-5 day's**



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Alternative tying systems

# Apollo Coach Screws

## For most masonry substrates and timber

**Average tensile loads of 15 kN in concrete**

APOLLO

Nylon scaffold plugs are significantly different to standard wall plugs. The scaffold plug is nylon and not plastic and therefore tensile loads are higher: it has a collar at the top of the plug that offers several benefits including the quality check on a safe and secure installation. All performances are based on a collared nylon plug that is referred to as a nylon scaffold plug. Why settle for inferior substitutes?

## Nylon scaffold plug data

| Size: Diameter and length mm | Apollo code | Plug diameter mm | Plug length mm | Drill bit diameter mm | Min drill Hole depth mm | Safe edge distance mm* | Quantity Per Box |
|---|---|---|---|---|---|---|---|
| 14 x 70 | NSP141 | 14 | 70 | 14 | 85 | 70 | 50 |
| 14 x 100 | NSP142 | 14 | 100 | 14 | 115 | 70 | 50 |
| 14 x 135 | NSP143 | 14 | 135 | 14 | 150 | 70 | 50 |

* can be reduced to 50 mm: technical services can offer further advise

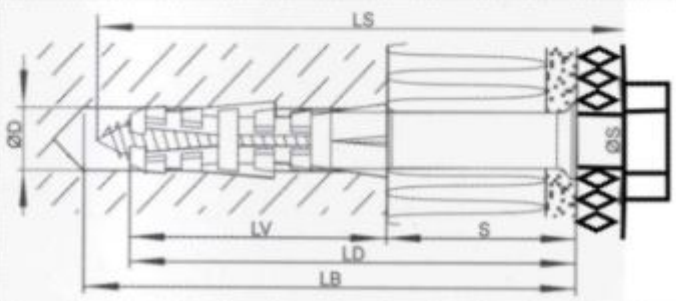
### Installation advise

1. Selection of the correct plug length:
   70 mm into the face of a base material without render or roughcast.
   100 mm or 135 mm on rendered or roughcast substrates
2. Installation possible in concrete, granite brickwork, blockwork, sandstone and usually mortar joints
3. Before using in holed or slotted bricks, please contact our technical services team
4. Holes to be drilled a minimum of 15 mm longer than the plug length
5. The minimum edge distance in structural material to maintain the maximum loads is 70 mm. By positioning the expansion "zone" that doesn't travel directly towards the edge you can go as close as 50 mm.
6. Screw the in screw until the under side of the bolt head provides a good clamping action. Screwing any further will not enhance performance.

**When used with either system scaffolds or tube and fittings the tie pattern remains the same that used with traditional metal expansion anchors.**

**The correct and final setting position for all plug and coach screw lengths.**

LS = Screw shank length
LV = Embedment into structural material
LD = Plug length
LB = Drilled hole depth.
A minimum of 15 mm longer than the length of the plug.
S = Non structural material.
Only usually relevant with plugs of 100 mm or longer.
ØS = Screw diameter entering the plug. Always 12 mm.
ØD = Hole diameter. Always 14 mm.




**Plug cover caps are available. Please see page 49**

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ADDITIONAL SUPPLEMENTARY COUPLER REQUIRED HERE.

Alternative tying systems

# Apollo Scaffold Screw System

## For most masonry substrates

**Introduced into the UK by Apollo in 1999 as a stocked product**

APOLLO

### Designer, purchaser and installer benefits

Often offering higher tensile loads than expected. In place anchors quite often provide tensile performances greater than the traditional M16 insert usually due to the simplicity of the setting procedure. Expect performances of between 8-20+ kN into the range of suitable materials.

Can be used with tube and fittings as well as lightweight systems such as layer, cuploc and kwikstage. Small hole diameter of 14 mm that can be rapidly drilled using battery drills.

Ideal for fixing blind across a cavity where our training programme can show you how to achieve a correct setting 100% of the time: this means consistency in performance. An ideal system for being fixed across a cavity that is being constructed.
Correctly installed fixings can be achieved and visually recognised with every fix.
Visual setting guide to enhance the quality and consistency of the installation.

Suitable for contracts that require the smallest possible area of tubing to be in contact with the structure. This can be achieved by using the Apollo internal Scaffold hook.
Can accept small short term shear loads that will return the screw to its original shape.
In applications were the screw will protrude over 120 mm from the wall additional consideration is recommended for the use of the Apollo external hook.



All screws are measured by their entire shank length.
The amount of protrusion will be the shank length less the length of the selected plug plus 5 mm.
All screws have a 23 mm diameter eye that allows the use of an Apollo scaffold hook or other proprietary connections.
To install only a 14 mm drill bit is required, unless you are fixing blind across a cavity: for advise on this application contact technical services at Apollo.

| Type | Drill bit Diameter mm | Shaft Protrusion using the stated plug lengths mm 70 | 100 |
|---|---|---|---|
| ASS 12 X 90 | 14 | 15 | na |
| ASS 12 X 120 | 14 | 45 | 15 |
| ASS 12 X 160 | 14 | 85 | 55 |
| ASS 12 X 190 | 14 | 115 | 85 |
| ASS 12 X 230 | 14 | 155 | 125 |
| ASS 12 X 300 | 14 | 225 | 195 |
| ASS 12 X 350 | 14 | 275 | 245 |
| ASS 12 x 400 | 14 | 325 | 295 |
| ASS 12 x 450 | 14 | 375 | 345 |
| ASS 12 x 500 | 14 | 425 | 395 |
| ASS 12 x 550 | 14 | 475 | 445 |

### Average tensile values when using the ASSS, Apollo scaffold screw system

| Substrate | kN |
|---|---|
| Concrete C15 | 12.5 |
| Concrete C25 | 19.5 |
| Solid Brick | 15 |
| Granite | 19.5 |

Details of performances into the following materials are available from our technical services team;

Mortar joints, Sandstone, Concrete block, Softwood, Slotted brick, Perforated brick, Engineering brick, Timberstrand

10 kN = 1 tonne
Shear and compressive performances and installation method statements are available on request



Alternative tying systems

Apollo Scaffold Screw System
For most masonry substrates
Introduced into the UK by Apollo in 1999 as a stocked product

APOLLO

Nylon scaffold plugs are significantly different to standard wall plugs. The scaffold plug is nylon and not plastic and therefore tensile loads are higher: it has a collar at the top of the plug that offers several benefits including the quality check on a safe and secure installation. All performances are based on a collared nylon plug that is referred to as a nylon scaffold plug. Why settle for inferior substitutes?



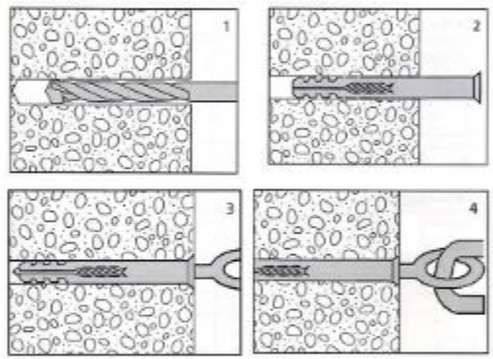
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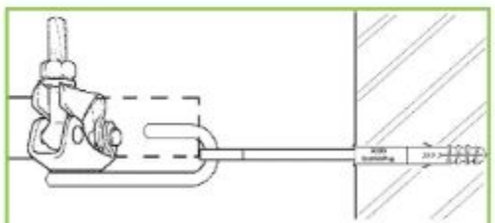
* can be reduced to 50 mm: technical services can offer further advise

### Installation advise

- Selection of the correct plug length:
  70 mm into the face of a base material without render or roughcast.
  100 mm or 135 mm on rendered or roughcast substrates
- Installation possible in concrete, granite or solid base materials: following on site tests, mortar joints
- Before using in holed or slotted bricks, please contact our technical services team
- Holes to be drilled a minimum of 15 mm longer than the plug length
- The minimum anchorage depth and edge distance in structural material to maintain the maximum loads is 70 mm.
- Screw the in screw until the appropriate markings on the screw shank are flush with the plug collar. Screwing any further will not enhance performance.
- Connect the tube using a suitable hook. Apollo offer two different designs. When using the internal style ensure that the tubes and screws are close to being perpendicular to the wall.




**When used with tube and fittings the tie pattern remains the same as that used with traditional metal expansion anchors.**



Installation of the scaffold screw system showing the internal scaffold hook: system completely 'locked' in position for zero movement.

**Connect onto a scaffold screw using a scaffold hook**



Internal style



External style

**Cover caps**
See page 49 for additional information.

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Alternative tying systems

# Apollo Scaffold Screw System

**For most masonry substrates**

**Introduced into the UK by Apollo in 1999 as a stocked product**

APOLLO

Nylon scaffold plugs are significantly different to standard wall plugs. The scaffold plug is PA6 nylon and not plastic. Tensile loads are higher and retained for a minimum of 10 years.
The collar that is positioned on the top of the plug retains the plug on the surface so that consistent and the correct settings are achieved all of the time. The system allows additional benefits.
The checking of a correctly installed tying system can easily be achieved. So you can rapidly identify that you have a safe and secure installation.
Nylon is also very suitable for most UK substrates including mortar joints and low density brickwork.
Collared nylon plug are referred to as a nylon scaffold plug in PA6 nylon.

Why settle for inferior substitutes?



14x70 mm



14x100 mm
Other sizes available from stock



A load of 18 kN without movement into a mortar joint.
The red plug was the original Apollo plug but a significant performance improvement encouraged us to change in 2006 to our current supplier.



Screws are designed to bend without breaking up to 90 degree

8 kN into a mortar joint without movement! Still more capacity left. Loads into mortar joints of up to 18 kN without any movement have been recorded





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Alternative tying systems

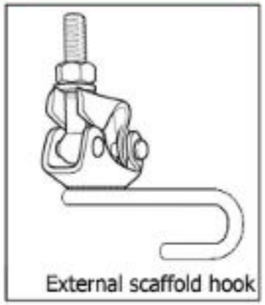
# Apollo Scaffold Hooks

**Developed by Apollo in 1999 for connecting onto scaffold screws**

**Quality designed hooks with a 22 mm working tolerance**

APOLLO

Four styles:
Internal and external hook, the new extended internal hook where safe checking can be achieved and the 'Eco90 degree bend' type.
Two types:
Pressed metal and drop forged on available to order.
Available from stock for same day despatch all styles on pressed metal fittings. The extended hooks are made to order.



External scaffold hook

**External scaffold hook, SWL 18.3 kN***

This design allows the tube to butt up to the wall.
This is the recommended for use where ever it is practical and possible.

**Internal scaffold hook, SWL 18.3 kN***

This design achieves almost zero movement between the Apollo scaffold screw and the hook on this fitting by butting the tube up to the back of the screw.
This style of fitting is ideal whenever you require the smallest possible tie connection protruding off the wall of the structure. With the tube not having contact with the wall it means that rendering works or the fixing of panelling and insulation boards can be carried out.



Internal scaffold hook

**Apollo Hooks and the "J" bolt design**

## How are the Apollo Hooks different? Why do they have far higher SWL's

1. The working tolerance of 22 mm means that if your fixers don't drill accurately then they still have a sensible tolerance that allows a connection without the need to "hammer" the fittings on.

## 2. The "J" bolt design is crucial to the performance of a scaffold hook.

**Its not necessarily the weld.**

3. To transfer the total loads onto the weld then the connection between the eye and hook can only be made within the curved area of the "J" bolt.

4. A "J" bolt connection to the fitting that provides a minimum of 35 kN tensile safe working load of 18.3 kN when 'checked' accordingly.



A very practical 22 mm working tolerance

The tooling to produce an 'Apollo Hook' costs more than other designs. It needs to be replaced on a regular basis to maintain a close to parallel as possible on the return leg of the 'J' bolt.



A not very practical 3 mm working tolerance

The 'arrow' point provides no more than 3 mm of working tolerance as per top arrow.
Any connection on the straight part after the bend, indicated by the lower arrow will lead to a maximum load of no more than 7-10 kN before they bend.
That's a SWL of only 3.5-5 kN MAXIMUM

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