

## Reaching down - way down!

No auto feed application is identical to another! Each product surface should be evaluated in regards to its accessibility and special tooling may be necessary

This write-up was specifically done to remove the "mystery" of tooling and to help our clientele with product design. By using this specification sheet already in the product design stage, future "access problems" can easily be avoided.

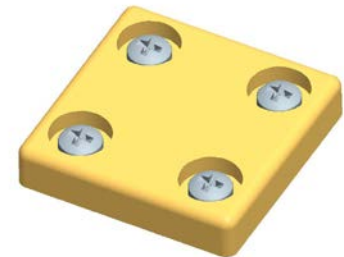
We believe that the graphical demonstration helps with tooling selection as well.

### Possible arrangements of nosepieces and applications

#### 1. Cylindrical Recess:

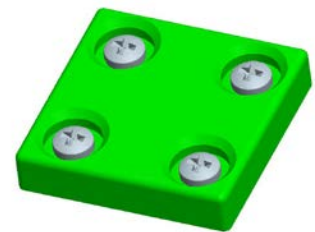
If space (the gap) between the diameter of the screw head and the internal diameter of the cylindrical recess is larger than 0.8 mm (at both sides) and the diameter of the screw head is smaller than 8.5 mm à we can use a nosepiece ball-type with extension sleeve

If the gap is too small for the use of an extension sleeve or in the case of a larger screw head diameter we have to use a nosepiece split-type. In this case the length of the screw shaft has to be approx. 4 to 5 mm longer than the depth of the cylindrical recess.



#### 2. Cylindrical Recess with (large) chamfer:

If the space (the gap) between the diameter of the screw head and the internal diameter of the cylindrical recess is larger than 0.8 mm (at both sides) and the diameter of the screw head is smaller than 8.5 mm à a nosepiece ball-type with extension sleeve or a nosepiece ball-type with a chamfer can be used. If the gap is too small for the use of an extension sleeve or in the case of a larger screw head diameter we have to use a nosepiece split-type. In this case the length of the screw shaft has to be approx. 4 to 5 mm longer than the depth of the cylindrical recess.



### 3. Recessed screw location with partial wall:

If space (the gap) between the diameter of the screw head and the radius of the wall is larger than 0.8 mm and the diameter of the screw head is smaller than 8.5 mm → we can use a nosepiece ball-type with extension sleeve

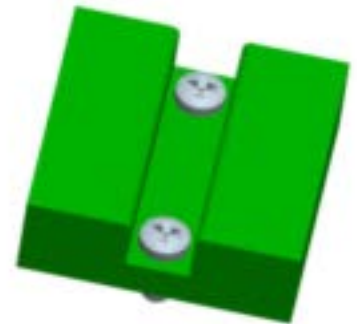


For a larger screw head diameter we have to use a nosepiece split-type with support-ring.

### 4. The recessed screw located in a T-slot (groove):

For such kind of screw locations we use a nosepiece split-type (the jaws have to open parallel to the walls)

For shorter screws (length of the shaft is smaller than the depth of the groove add 5 mm) the width of the groove should be approx. 0.6 mm bigger than the head diameter of the screw



For longer screws there is no additional gap necessary

For the orientation between groove (part) and nosepiece split-type (screwdriver) a linear-stand with a swivel screwdriver-fixture may be helpful

### 5. Freely accessible screw location, flat surface:

Generally, a nosepiece split-type (possibly with locks) is preferred.

If the risk of scratches and marks needs to be reduced, a nosepiece split-type with support ring (front side polished or with a protective sleeve made from plastic → plastic sleeve is a wear part) can be used.

If no scratches or marks are allowed, we recommend the use of a template (mask). Combined with this template the use of a nosepiece ball-type (with big chamfer) is possible.



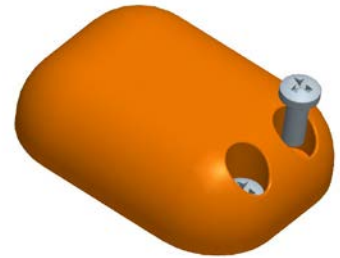
## 6. Electronic Components (for example PCBs):

Generally, it is not allowed to physically touch the electronic components and an electronic circuit. If there is enough space, a nosepiece split-type (possibly with support-ring) can be used. If there not enough space the use of a template in combination with a nosepiece ball-type (with big chamfer) is recommended.

## 7. Recessed screw locations and round geometries:

This kind of screw locations (examples: mobile phones or remote controls) do not offer the possibility of positioning the nosepiece

Often these parts are sensitive to scratches or marks, the use of a template in combination with a nosepiece ball-type (with big chamfer) is needed.



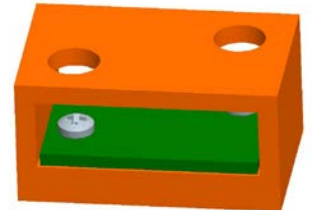
## 8. Screw location covered by another component:

We reach the point of assembly only through the other component or cover plate

Therefore, the two holes (screw position and hole of the component above) have to be in line (coaxial).

The diameter of the hole in the component must be approx. 2 mm bigger than the diameter of the screw head

If the screw head diameter is not larger than 8.5 mm, the use of a nosepiece ball-type with extension sleeve is possible. Otherwise we have to go for a nosepiece split-type with support-ring



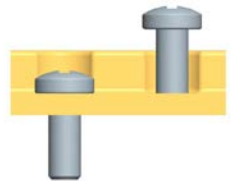
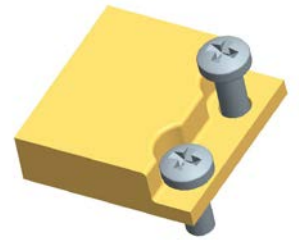
## 9. Screw location reaches partly into the geometry of a wall:

If the length of the shaft is approx. 5 mm longer than the height of the wall and the diameter of the shaft is not yet reaching into the geometry of the walls, we can work with a nosepiece split-type

For shorter screws or if the diameter of the shaft is reaching into the geometry of the

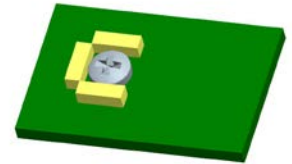
walls, we have to work with a template in combination with a nosepiece ball-type (with chamfer)

If space (the gap) between the diameter of the screw head and the radius of the wall is bigger than 0.8 mm and the diameter of the screw head is smaller than 8.5 mm à the use a nosepiece ball-type with extension sleeve is possible.



## 10. screw locations with walls at three sides:

If space (the gap) between the diameter of the screw head and the geometry of the wall is larger than 0.8 mm and the diameter of the screw head is smaller than 8.5 mm à the use of a nosepiece ball-type with extension is possible.



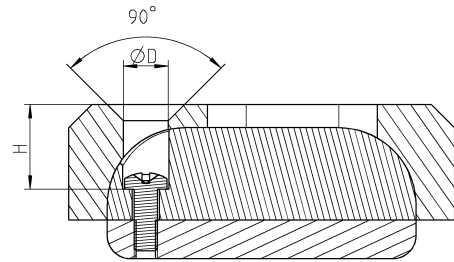
## 11. Assembly of parts with several plates:

For this kind of assembly it is important that the screw is not able to move back into the nosepiece. This can be realized with a nosepiece split-type with lockjaws.



## USING A TEMPLATE (mask)

Templates shall be used, if the screw locations do not offer the possibility of orientating the nosepiece at its outer geometry or when the use of a template is speeding up the process due to a high amount of assemblies.

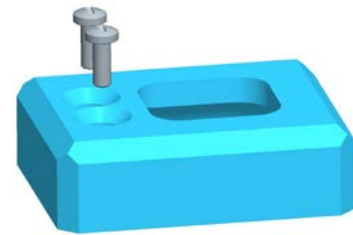


Another application is the assembly of parts with a very sensitive surface (very fine outside surface or e-cards). The use of a template will avoid touching the surface of the part.

Furthermore a template can be used to determine the sequence of assemblies by numbering the through holes (sleeves) of the template.

The geometry of the template will allow the use and simplify the positioning of a nosepiece ball-type (with chamfer). Please consider the following advice for the design of your part/template:

- The gap between the template and the part should be as small as possible.
- The chamfer for positioning the nosepiece has a 90° angle.
- The internal diameter of the hole ( $\varnothing D$ ) is equivalent to the maximum head diameter plus 0.2 mm



If we work with applications where it is necessary to use custom-made templates, we need the maximum dimension H (see sketch) from the customer, to determine the necessary stroke of the mouthpiece guide.

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