# pextract

| | | | |
|---|---|---|---|
| **keys:** | **[id]** | *<number>* | extract particle with specified identifier (source background, if zero) |
| | **[segment]** | *<number>* | segmented picture produced by ***analyse*** |
| | **[plist]** | *<number>* | source particle parameter list containing results from ***analyse*** |
| | **[to]** | *<number>* | output picture |
| | **value** | *<number>* | background pixel value |
| | **image** | *<number>* | fill particle outline with intensity values taken from the specified image |

Use the **pextract** command to isolate a particle of interest. **pextract** operates on the particle parameter list (*ppl*) and the segmented picture produced by the **analyse** command. **pextract** extracts a single particle and places it in its own picture, in either grey level or binary form.

## Examples

```
pextract id 5 to 12
```

This command extracts a particle with the identifier 5 and produces the binary image of the particle in a minimal size picture 12.

```
pextract image 2 to 3 value -1
```

This command places in picture 3 a region of picture 2 just large enough to contain the current particle (identifier stored in the variable *pid*). It preserves the original intensity values within the particle boundary and sets the intensity of other pixels to –1.

## Description

By default, **pextract** produces a binary picture (containing the values 0 and 1) which is just large enough to contain the specified particle, with a one pixel border on all sides. Pixels that belong to the particle are given the value 1 and background pixels are set to 0. To preserve the original pixel values within the particle boundary, specify a source picture using the **image** key.

If you give a zero value to the **id** key, **pextract** extracts the picture background. By default, the output is in the same form as the source *Image* or in Byte form if one is not specified.

## Notes

forms used internally: fp
see also: **analyse**

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## Defaults and Ranges

| keys/options | defaults | range |
|---|---|---|
| [id] | current particle identifier, held in the variable *pid* | positive integer or zero |
| [segment] | current segmented picture, held in the variable *psegment* | valid picture number |
| [plist] | *ppl* held in the variable *pplist* | valid picture number |
| [to] | picture number 997 | valid picture number |
| value | value 0 | real number |
| image | binary image generated | valid picture number |