symbolstyle — Choices for the shape of markers

Description

Markers are the ink used to mark where points are on a plot; see [G-3] marker_option. symbolstyle specifies the shape of the marker.

You specify the symbolstyle inside the msymbol() option allowed with many of the graph commands:

```
    . graph twoway ..., msymbol(symbolstyle) ...
```

Sometimes you will see that a symbolstylelist is allowed:

```
    . scatter ..., msymbol(symbolstylelist) ...
```

A symbolstylelist is a sequence of symbolstyles separated by spaces. Shorthands are allowed to make specifying the list easier; see [G-4] stylelists.

Syntax

```
<table>
<thead>
<tr>
<th>symbolstyle</th>
<th>Synonym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>circle</td>
<td>O</td>
<td>solid</td>
</tr>
<tr>
<td>diamond</td>
<td>D</td>
<td>solid</td>
</tr>
<tr>
<td>triangle</td>
<td>T</td>
<td>solid</td>
</tr>
<tr>
<td>square</td>
<td>S</td>
<td>solid</td>
</tr>
<tr>
<td>plus</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>arrowf</td>
<td>A</td>
<td>filled arrow head</td>
</tr>
<tr>
<td>arrow</td>
<td>a</td>
<td></td>
</tr>
<tr>
<td>pipe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>smcircle</td>
<td>o</td>
<td>solid</td>
</tr>
<tr>
<td>smdiamond</td>
<td>d</td>
<td>solid</td>
</tr>
<tr>
<td>smsquare</td>
<td>s</td>
<td>solid</td>
</tr>
<tr>
<td>smtriangle</td>
<td>t</td>
<td>solid</td>
</tr>
<tr>
<td>smplus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>smx</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>smv</td>
<td>v</td>
<td></td>
</tr>
<tr>
<td>circle_hollow</td>
<td>Oh</td>
<td>hollow</td>
</tr>
<tr>
<td>diamond_hollow</td>
<td>Dh</td>
<td>hollow</td>
</tr>
<tr>
<td>triangle_hollow</td>
<td>Th</td>
<td>hollow</td>
</tr>
<tr>
<td>square_hollow</td>
<td>Sh</td>
<td>hollow</td>
</tr>
</tbody>
</table>
```
### symbolstyle — Choices for the shape of markers

<table>
<thead>
<tr>
<th>symbolstyle</th>
<th>style</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>smcircle_hollow</td>
<td>oh</td>
<td>hollow</td>
</tr>
<tr>
<td>smdiamond_hollow</td>
<td>dh</td>
<td>hollow</td>
</tr>
<tr>
<td>smtriangle_hollow</td>
<td>th</td>
<td>hollow</td>
</tr>
<tr>
<td>smsquare_hollow</td>
<td>sh</td>
<td>hollow</td>
</tr>
<tr>
<td>point</td>
<td>p</td>
<td>a small dot</td>
</tr>
<tr>
<td>none</td>
<td>i</td>
<td>a symbol that is invisible</td>
</tr>
</tbody>
</table>

For a symbol palette displaying each of the above symbols, type

```
palette symbolpalette [, scheme(schemename)]
```

Other symbolstyles may be available; type

```
.graph query symbolstyle
```

to obtain the complete list of symbolstyles installed on your computer.

### Remarks and examples

Remarks are presented under the following headings:

- **Typical use**
- **Filled and hollow symbols**
- **Size of symbols**

#### Typical use

msymbol(symbolstyle) is one of the more commonly specified options. For instance, you may not be satisfied with the default rendition of

```
.scatter mpg weight if foreign ||
.scatter mpg weight if !foreign
```

and prefer

```
.scatter mpg weight if foreign, msymbol(oh) ||
.scatter mpg weight if !foreign, msymbol(x)
```

When you are graphing multiple y variables in the same plot, you can specify a list of symbolstyles inside the msymbol() option:

```
.scatter mpg1 mpg2 weight, msymbol(oh x)
```

The result is the same as typing

```
.scatter mpg1 weight, msymbol(oh) ||
.scatter mpg2 weight, msymbol(x)
```

Also, in the above, we specified the symbol-style synonyms. Whether you type

```
.scatter mpg1 weight, msymbol(oh) ||
.scatter mpg2 weight, msymbol(x)
```

or

```
.scatter mpg1 weight, msymbol(smcircle_hollow) ||
.scatter mpg2 weight, msymbol(smx)
```

makes no difference.
Filled and hollow symbols

The *symbolstyle* specifies the *shape* of the symbol, and in that sense, one of the styles circle and hcircle—and diamond and hdiamond, etc.—is unnecessary in that each is a different rendition of the same shape. The option *mfcolor(colorstyle)* (see [G-3] *marker_options*) specifies how the inside of the symbol is to be filled. hcircle(), hdiamond, etc., are included for convenience and are equivalent to specifying

\[
\begin{align*}
\text{msymbol(Oh)} & : \text{msymbol(O) mfcolor(none)} \\
\text{msymbol(dh)} & : \text{msymbol(d) mfcolor(none)}
\end{align*}
\]

etc.

Using *mfcolor()* to fill the inside of a symbol with different colors sometimes creates what are effectively new symbols. For instance, if you take msymbol(O) and fill its interior with a lighter shade of the same color used to outline the shape, you obtain a pleasing result. For instance, you might try

\[
\text{msymbol(O) mlcolor(yellow) mfcolor(.5*yellow)}
\]

or

\[
\text{msymbol(O) mlcolor(gs5) mfcolor(gs12)}
\]

as in

\[
\text{. scatter mpg weight, msymbol(O) mlcolor(gs5) mfcolor(gs14)}
\]

Size of symbols

Just as msymbol(O) and msymbol(Oh) differ only in *mfcolor()* , msymbol(O) and msymbol(o)—symbols circle and smcircle—differ only in *msize()* . In particular,

\[
\begin{align*}
\text{msymbol(O)} & : \text{msymbol(O) msize(medium)} \\
\text{msymbol(o)} & : \text{msymbol(O) msize(small)}
\end{align*}
\]

and the same is true for all the other large and small symbol pairs.

*msize()* is interpreted as being relative to the size of the graph region (see [G-3] *region_options*), so the same symbol size will in fact be a little different in
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. scatter mpg weight

and

. scatter mpg weight, by(foreign total)

Also see

[G-3] marker_options — Options for specifying markers
[G-4] colorstyle — Choices for color
[G-4] linepatternstyle — Choices for whether lines are solid, dashed, etc.
[G-4] linestyle — Choices for overall look of lines
[G-4] linewidthstyle — Choices for thickness of lines
[G-4] markersizestyle — Choices for the size of markers
[G-4] markerstyle — Choices for overall look of markers