Samples of common \TeX{} font encodings

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The \texttt{pkfix-helper} program occasionally needs help from the user in selecting an appropriate \texttt{tfm} file to match a Type 3 font found in a PostScript document. This document assists with the task of identifying fonts by presenting character-by-character comparisons of all 256 character positions in a selection of common \TeX{} fonts. The following encodings are represented:

- \TeX{} text (e.g., \texttt{cmr10})
- \TeX{} math italic (e.g., \texttt{cmmi10})
- \TeX{} math symbols (e.g., \texttt{cmsy10}, \texttt{msam10}, and \texttt{msbm10}—each of which provides different symbols)
- \Extended\TeX{} symbols (e.g., \texttt{lasy10})
- \TeX{} math extension (e.g., \texttt{cmex10})
- \TeX{} base 1 encoding (e.g., \texttt{ptmr8r})
- Adobe standard encoding (e.g., \texttt{ptmr})
- Adobe symbol encoding (e.g., \texttt{psyr})
- \TeX{} extended ASCII (e.g., \texttt{cmtex10})
- \TeX{} font encoding (e.g., \texttt{ecrm1000})
- \TeX{} text companion symbols (e.g., \texttt{tcrm1000})
- \TeX{} text subset (e.g., \texttt{eufm10}, which provides fraktur letters for mathematical typesetting)
- unspecified (e.g., \texttt{stmary10}; \texttt{wasy10} is also included here although it erroneously claims to be \TeX{} text)

The following encodings are not shown in this document because the glyphs they provide exhibit little variety and are therefore relatively easy to identify:

- \Extended\TeX{} circle (e.g., \texttt{lcircle10})—circles and 90° arcs in different sizes
- \Xy{} line segments (e.g., \texttt{xyline10})—line segments in different orientations
- \Xy{} miscellaneous (e.g., \texttt{xymisc})—90° arcs in different sizes
- \Xy{} quarter circles (e.g., \texttt{xyqc10})—small 90° arcs in different orientations
- \Xy{}-pic 1/8 circles (e.g., \texttt{xycirc10})—45° arcs in different sizes
- \Xy{}-pic directional (e.g., \texttt{xyatip10}, \texttt{xybsql10}, \texttt{xybtip10}, and many others)—small-degree arcs in different orientations
- \Xy{}-pic semidirectional (e.g., \texttt{xydash10})—short line segments in different orientations

To use the tables that appear below, first produce “before” and “after” font sheets using \texttt{pkfix-helper}’s \texttt{--ps} and \texttt{--tex} options. (See the \texttt{pkfix-helper} documentation for details.) For each font in which the “after” characters are completely different from the “before” characters—as opposed to merely the wrong selection of font size, weight, or slant—make a note of the font that \texttt{pkfix-helper} announced it had selected. Find the table and column in which the “before” symbol exists and the “after” symbol is associated with the font selected by \texttt{pkfix-helper}. The font associated with the “before” symbol is what should be specified in a \texttt{--force} option to \texttt{pkfix-helper}. For example, consider the observations shown in Figure 1. We find that the “after” character, “η”, is associated with \texttt{cmmi10} (the same typeface used for \texttt{cmmb10} but in book weight) at character position 17. The “before” character, “≡”, is also present in position 17 and is associated with \texttt{cmsy10}. Therefore, we should re-run \texttt{pkfix-helper} with the \texttt{--force="Fj=cmcsy10 @ 1.2X"} option to force it to associate document font \texttt{Fj} with \texttt{cmsy10} instead of \texttt{cmmb10}.
Once the correct typeface is identified, the font size may need adjusting. In the preceding example, \texttt{--force="Fj=cmsy9"} may produce less mismatch for \texttt{cmmib10 @ 1.2X} than does \texttt{--force="Fj=cmsy10 @ 1.2X"}. Making such a determination requires human involvement. A suggested approach is first to let \texttt{pkfix-helper} identify the size and scale automatically by specifying \texttt{--force="Fj=cmsy*"}. If doing so produces a poor match or selects an unlikely scale factor, then the user should manually adjust the font size and/or scale factor.

\begin{verbatim}
pkfix-helper: Processing Fj ... done (cmmib10 @ 1.2X, mismatch=0.00073)
--ps file: Fj: ≡
--tex file: Fj: η
\end{verbatim}

Figure 1: Sample observations of \texttt{pkfix-helper} output and output files