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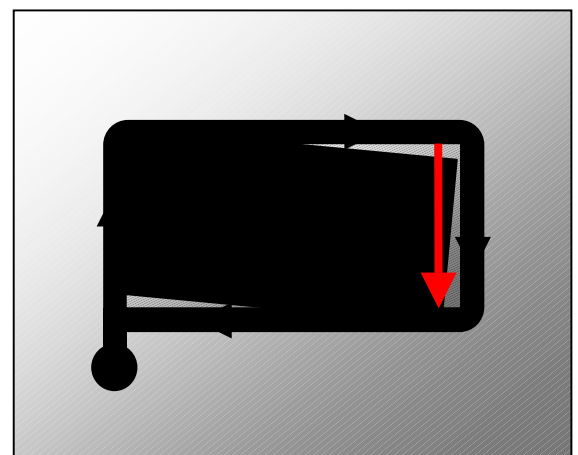
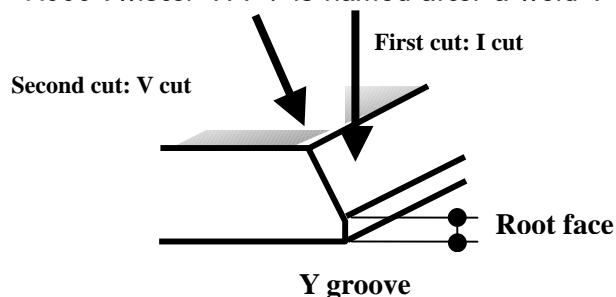
About Root Twister TFPV

Root Twister TFPV has been developed by Komatsu Industries Corporation (KIC) as a machine to make weld preparation bevel cuts, in addition to normal plasma cutting. KIC has started to sell TFPV starting this November in Japan.

TFPV will dramatically improve efficiency of the cutting process, include welding preparation, and it can reduce product cost and time for weld groove.



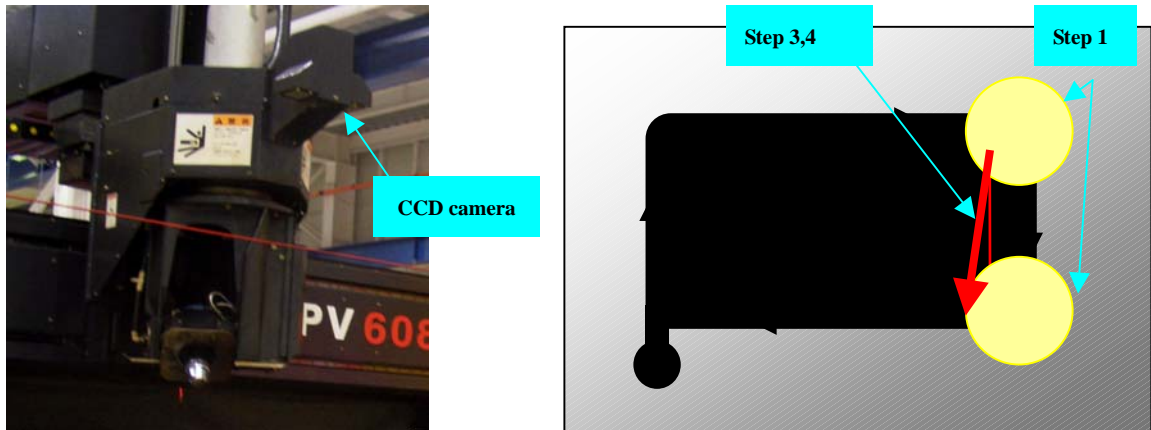
Root Twister TFPV is named after a weld Y groove with a root face.



To cut a weld groove with a root face, as in the picture above, requires two cuts. Ordinary bevel plasma cutting machines used for weld preparation have difficulty when on the second cut. The difficulty is as follows:

After the first cut, the part cut out from a plate by the first cut may move within the cutting kerf. When the machine is positioned for the second cut by the NC program, the second cut may be incorrect because of dislocation of the part, even if the machine motion for second cut is very accurate.

To solve the inaccuracy caused by dislocation of part after the first cut, Komatsu Root Twister TFPV has an original unique compensation system with CCD camera and image processor. The compensation system works as follows:



- Step 1: After the first cut, the CCD camera, located above the plasma torch, takes two images including a corner.
- Step 2: Using the two images including a corner, the image processor calculates the amount of dislocation of the part.
- Step 3: The CNC of the TFPV modifies the program for the second cut to compensate for the dislocation of the part.
- Step 4: The second cut is done by the modified program with compensation for dislocation.

The compensation system of Root Twister TFPV contributes to achieve accurate Y weld groove.

【 applicable weld groove for TFPV with 60 kW Twister Fine Plasma 】

- Bevel angle of weld groove: from -45 degree to +45 degree
- Maxxam cutting thickness: 36mm for straight cut
25mm for bevel cut with 45 degree
32mm for bevel cut with 30 degree

Groove shape:

