```
TwoPass@k MD :=
TwoPass@k = Block [a, c, n = Length@k,
    p = List@@Build@k //
       (\sharp^{\mathsf{T}} \bigcup (\mathsf{Abs@Reverse@\# Sign@\#})^{\mathsf{T}} \llbracket 2 \rrbracket \&,
    v, y = \{\}\},
  Do [v = Abs@p[Mod[{i, i+1}, 2n, 1]]];
    If[Sort@
        Sign@p[Mod[{i, i+1}, 2n, 1]] = {-1, 1},
     Do[If[Total@Mod[1, 2] == 2,
        c = Range @@@
          Partition[1+{1,-1,1,-1},2];
        If[¬MemberQ[Join@@c, i],
         1 = RotateLeft@1;
         c = Mod[Range @@@ Partition[
              1+{1,-1,1,2n-1},2],2n,1]];
        If[Length[Join@@c] < 2n - 4
          \wedge v \cup Join@@c == Abs@p[Join@@c] \cup
             Mod[{i, i+1}, 2n, 1],
         (*A 2-pass can be made with
            the given settings.*)
         AppendTo[y, Convert[
            Build@k /. x Integer :>
              PassMapping[v, 1, p, c,
                n, Abs@x, i]]]]],
       {1, Sort@Join[#, v] & /@
         Subsets[Delete[Range[2 n],
            Mod[{\{i, i+1\}}^{T}, 2n, 1]], {2\}]}],
    {i, 2n}];
  KnotSort[Minimal/@y \cup {}]|;
```