Hi4 Function Training

User Coordinate

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1. Coordinate System of Hi4 controller

① Robot coordinate system : Coordinate puts robot base frame.
② Base coordinate system : Coordinate puts the center of traverse axis.
③ Tool coordinate system : Coordinate puts the current orientation of TCP.
④ Encoder coordinate system : All value are each axis position.
⑤ User coordinate system : Coordinate can put anywhere set by user.

2. Where to use coordinate system

① Select "Pose REC Type=<Base,Robot,Enco,U,Un>" in PF2"system" > {1: User parameter}
② All pose variables support base, robot, encoder, user coordinate system with postfix character as Pn=(....), Pn=(....)R, Pn=(....)E, Pn=(....)U, Pn=(....)Un and the hidden pose of step.
Base coordinate
③ All shift variables support base, robot, tool, user coordinate system with postfix character as Rn=(....), Rn=(....)R, Rn=(....)T, Rn=(....)U and Rn=(....)Un
Base coordinate

3. User coordinate system

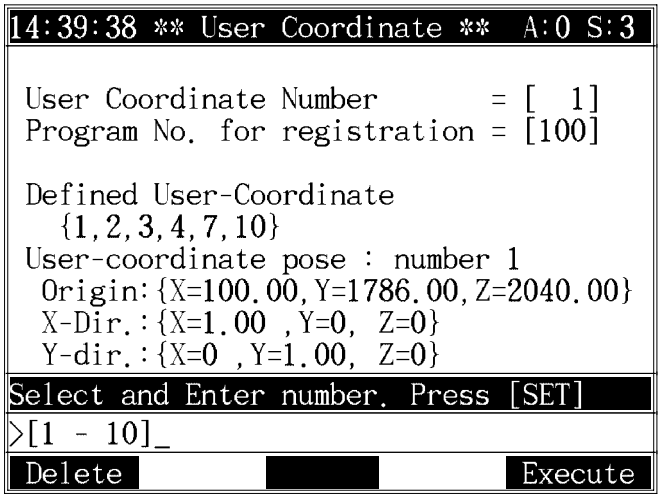
① U coordinate system : Coordinate number does not fix in recorded pose.
In running state, this coordinate number depends on "Select user coordinate=[n]" in the condition set.
Also this coordinate number can be changed with SELUCRD command in HR-BASIC.
② Un coordinate system : Coordinate number is fixed itself as Pn=(....)U2, Rn=(....)U2 and a hidden pose.

4. Hot to set the user coordinate

4.1 Method with teach pendant

① Make a program with 3 points as located on origin, x-direction and XY plane.

② press PF2"System" > {2: Control parameter} > {12: Coordinate setting} > {1: User coordinate}



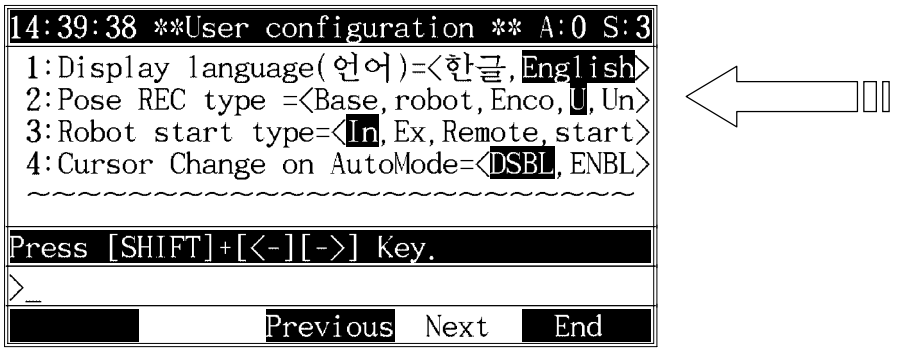
4.2 Command with HR-BASIC

MKUCRD <coord. number>,<origin pose>,<X dir. pose>,<XY plane pose>

5. How to teach program with U or Un

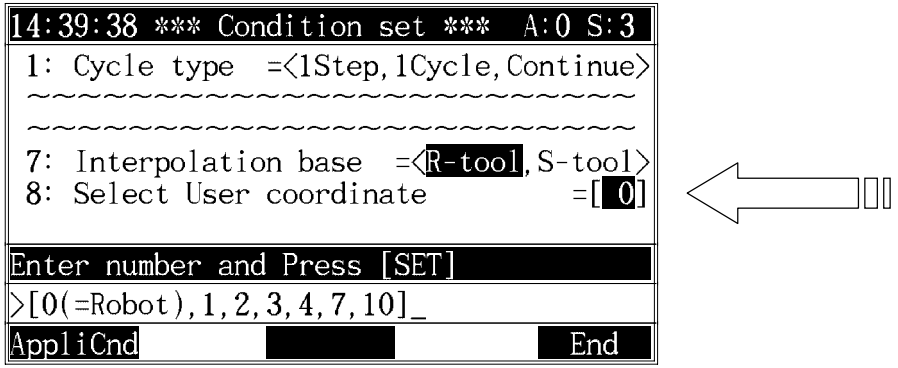
① Select "Pose REC Type=<U>", This is possible only engineering mode.

➡ Press PF2"system" > {1: User parameter}



② Set "Select User coordinate=[n]" by teach pendant

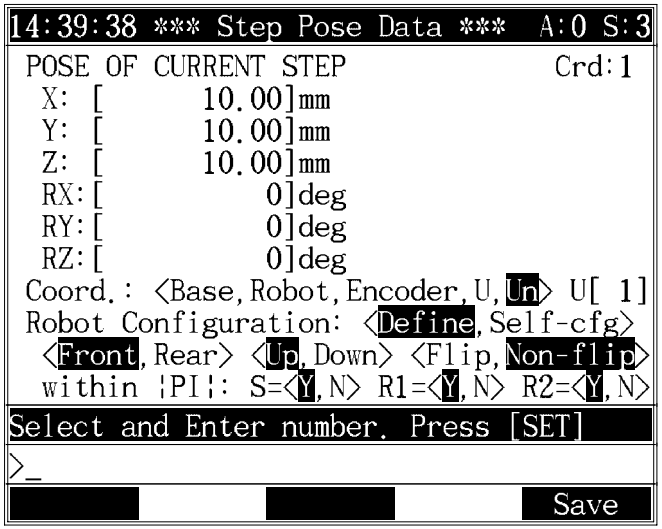
③ or you can use SELUCRD command in HR-BASIC : SELUCRD <coordinate number>



④ Record step by pressing [REC] key

6. How to change coordinate system for recorded pose

① Press [QuickOpen] key



② If you select "Pose REC type=<U>" at "System" > {1: User parameter},
You can convert a coordinate system to U only.

③ Also if you select "Pose REC type"=<Un> at "System" > {1: User parameter},
You can convert a coordinate system to Un only.

④ Un coordinate system used to special application
as where require multiple user coordinate system at each step in the same program.