

UF_DRPOS_ask_custom_feed [\(view source\)](#)

Defined in: `uf_drpos.h`

Overview

Asks custom feedrate information of a cut or stepover drive position.
This function is available only for cut and stepover drive positions.

Environment

Internal and External

```
int UF_DRPOS_ask_custom_feed
(
    UF_DRPOS_id_t drpos,
    UF_DRPOS_feed_use_t * feed_use,
    UF_DRPOS_feed_unit_t * feed_unit,
    double * feed_value
)
```

<code>UF_DRPOS_id_t</code>	<code>drpos</code>	Input	Identifier for a DRPOS object
<code>UF_DRPOS_feed_use_t *</code>	<code>feed_use</code>	Input	Use custom or default feed
<code>UF_DRPOS_feed_unit_t *</code>	<code>feed_unit</code>	Input	Custom feed rate units (used only if use custom feed)
<code>double *</code>	<code>feed_value</code>	Output	Custom feed value (used only if use custom feed)

UF_DRPOS_ask_drive_direction [\(view source\)](#)

Defined in: `uf_drpos.h`

Overview

Asks for drive direction data to cut a drive position. This function is available only for cut drive positions.

Environment

Internal and External

```
int UF_DRPOS_ask_drive_direction
(
    UF_DRPOS_id_t drpos,
    double dir [ 3 ]
)
```

<code>UF_DRPOS_id_t</code>	<code>drpos</code>	Input	Identifier for a DRPOS object
<code>double</code>	<code>dir [3]</code>	Output	The direction vector

UF_DRPOS_ask_grid_params (view source)

Defined in: uf_drpos.h

Overview

Returns the u and v parameter position of a drive point with respect to the surface grid

Environment

Internal and External

History

Released in NX3

```
int UF_DRPOS_ask_grid_params
(
    UF_DRPOS_id_t drpos,
    double uv [ 2 ]
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
double	uv [2]	Output	U,V parameters at the input drive position

UF_DRPOS_ask_position (view source)

Defined in: uf_drpos.h

Overview

Asks positional data of a cut or stepover drive position (the coordinates used for this must be in relation to the absolute coordinate system). This function is available only for cut and stepover drive positions.

Environment

Internal and External

```
int UF_DRPOS_ask_position
(
    UF_DRPOS_id_t drpos,
    double pos [ 3 ]
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
double	pos [3]	Output	The location of the drive position

UF_DRPOS_ask_proj_vec (view source)

Defined in: uf_drpos.h

Overview

Reads the projection vector data of a cut or stepover drive position (the coordinates used for this are in relation to the absolute coordinate system).

Environment

Internal and External

```
int UF_DRPOS_ask_proj_vec
(
    UF_DRPOS_id_t drpos,
    double proj_vec [ 3 ]
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
double	proj_vec [3]	Output	The projection vector

UF_DRPOS_ask_surface_identifier (view source)

Defined in: uf_drpos.h

Overview

Returns the surface identifier of a drive point

Environment

Internal and External

History

Released in NX3

```
int UF_DRPOS_ask_surface_identifier
(
    UF_DRPOS_id_t drpos,
    tag_t * eid
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
tag_t *	eid	Output	Surface identifier

UF_DRPOS_ask_surface_params (view source)

Defined in: uf_drpos.h

Overview

Returns the u and v parameter position of a drive point with respect to the surface

Environment

Internal and External

History

Released in NX3

```
int UF_DRPOS_ask_surface_params
(
    UF_DRPOS_id_t drpos,
    double uv [ 2 ]
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
double	uv [2]	Output	U,V parameters at the input drive position

UF_DRPOS_ask_tool_axis (view source)

Defined in: uf_drpos.h

Overview

Reads tool axis data of a cut or stepover drive position (the coordinates used for this are in relation to the absolute coordinate system).

Environment

Internal and External

```
int UF_DRPOS_ask_tool_axis
(
    UF_DRPOS_id_t drpos,
    double tool_axis [ 3 ]
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
double	tool_axis [3]	Output	The tool axis

UF_DRPOS_ask_type (view source)

Defined in: uf_drpos.h

Overview

Asks the type of a UF_DRPOS object.

Environment

Internal and External

```
int UF_DRPOS_ask_type
(
    UF_DRPOS_id_t drpos,
    UF_DRPOS_type_t * type
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
UF_DRPOS_type_t *	type	Output	The type of drive position

UF_DRPOS_ask_user_data [\(view source\)](#)

Defined in: `uf_drpos.h`

Overview

Asks for the user data area of a drive position. The user data is copied into a locally supplied variable. User data must point at memory of size "s" associated by the caller. "s" is the size specified as the second argument to `UF_DPUD_set_user_data_size`.

Environment

Internal and External

See Also

[UF_DPUD_set_user_data_size](#)

```
int UF_DRPOS_ask_user_data
(
    UF_DRPOS_id_t drpos,
    void * user_data
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
void *	user_data	Output	Pointer to user data

UF_DRPOS_ask_zig_zag_dir [\(view source\)](#)

Defined in: `uf_drpos.h`

Overview

Asks zig_zag information of a cut drive position. This function is available only for cut drive positions.

Environment

Internal and External

```
int UF_DRPOS_ask_zig_zag_dir
(
    UF_DRPOS_id_t drpos,
    UF_DRPOS_zig_zag_dir_t * zig_zag_dir
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
UF_DRPOS_zig_zag_dir_t *	zig_zag_dir	Output	Direction of zig/zag cuts

UF_DRPOS_create_cut (view source)

Defined in: uf_drpos.h

Overview

Formats a drive position as a cut. This formatting must be done before the Open API program can use the functions which set the position and other data of a cut drive position.

Environment

Internal and External

```
int UF_DRPOS_create_cut
(
    UF_DRPOS_id_t drpos,
    double pos [ 3 ],
    double dir [ 3 ]
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
double	pos [3]	Input	Drive position
double	dir [3]	Input	Drive direction

UF_DRPOS_create_final_lift (view source)

Defined in: uf_drpos.h

Overview

Formats a drive position as a final lift. A final lift must be the last drive position generated by the Open API program, and only one final lift must be generated, unless a "rewind" request has been received. Between any two lifts (local or final), the system should generate at least two cut or stepover positions.

Environment

Internal and External

```
int UF_DRPOS_create_final_lift
(
    UF_DRPOS_id_t drpos
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
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UF_DRPOS_create_first_cut [\(view source\)](#)

Defined in: `uf_drpos.h`

Overview

Formats a drive position as a first cut drive position. This formatting must be done before the Open API program can use the functions which set the positional and other data of a first cut drive position.

Environment

Internal and External

```
int UF_DRPOS_create_first_cut
(
    UF_DRPOS_id_t drpos,
    double pos [ 3 ],
    double dir [ 3 ]
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
double	pos [3]	Input	Drive position
double	dir [3]	Input	Drive direction

UF_DRPOS_create_local_lift [\(view source\)](#)

Defined in: `uf_drpos.h`

Overview

Formats a drive position as a local lift. Between any two lifts (local or final), the system should generate at least two cut or stepover positions.

Environment

Internal and External

```
int UF_DRPOS_create_local_lift
(
    UF_DRPOS_id_t drpos
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
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UF_DRPOS_create_stepover (view source)

Defined in: uf_drpos.h

Overview

Formats a drive position as a stepover cut drive position. This formatting must be done before the Open API program can use the functions which set the positional and other data of a stepover drive position.

Environment

Internal and External

```
int UF_DRPOS_create_stepover
(
    UF_DRPOS_id_t drpos,
    double pos [ 3 ],
    double dir [ 3 ]
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
double	pos [3]	Input	Drive position
double	dir [3]	Input	Drive direction

UF_DRPOS_delete (view source)

Defined in: uf_drpos.h

Overview

This function deletes a drive point that is output from UF_SCOP_get_next_drive_point.

Environment

Internal and External

See Also

UF_SCOP_get_next_drive_point

History

Released in NX3.0

```
int UF_DRPOS_delete
(
    UF_DRPOS_id_t drpos
)
```


UF_DRPOS_id_t

drpos

Input

UF_DRPOS_set_custom_feed (view source)

Defined in: uf_drpos.h

Overview

Writes custom feedrate information to a cut or stepover drive position. In general it should not be necessary to set the feedrate of a drive, as this is done by the processor based on the motion types output. However, in special cases the drive path generator may force a custom feedrate. In such cases, this function can be used to set the desired feedrate. This function is available only for cut and stepover drive positions.

Environment

Internal and External

```
int UF_DRPOS_set_custom_feed
(
    UF_DRPOS_id_t drpos,
    UF_DRPOS_feed_use_t feed_use,
    UF_DRPOS_feed_unit_t feed_unit,
    double feed_value
)
```

UF_DRPOS_id_t	drpos	Input	use custom or default feed
UF_DRPOS_feed_use_t	feed_use	Input	custom feed rate units (used only if use custom feed)
UF_DRPOS_feed_unit_t	feed_unit	Input	custom feed value (used only if use custom feed)
double	feed_value	Input	The custom feed value (used only if use custom feed)

UF_DRPOS_set_drive_direction (view source)

Defined in: uf_drpos.h

Overview

Writes drive direction data to a cut drive position. This vector is used when calculating a tool axis that depends on the direction of cut. For stepovers, the tool axis is interpolated between those of the previous cut position and the next cut position, and thus does not require a drive direction vector (the coordinates used for this must be in relation to the absolute coordinate system).

The drive direction is defined to be the unitized 3D tangent vector of the drive path:
drive_dir = dS/ds

where S is the path and s is the curve length.

If the path is not differentiable, which can happen if the path has a sharp bend, such as in piecewise linear paths, or if the drive position is next to a lift. In such cases the path should still have either one or two tangents:
dS/ds and/or -dS/ds

As cut drive position which are preceeded by lifts or stepovers, the drive direction vector should be the tangent of the previous cut, i.e.,
drive_dir = -dS/ds
This function is available only for cut drive positions.

Environment

Internal and External

```
int UF_DRPOS_set_drive_direction
(
    UF_DRPOS_id_t drpos,
    double dir [ 3 ]
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
double	dir [3]	Input	The direction vector

UF_DRPOS_set_position [\(view source\)](#)

Defined in: uf_drpos.h

Overview

Writes positional data to a cut or stepover drive position (the coordinates used for this must be in relation to the absolute coordinate system). This function is available only for cut and stepover drive positions.

Environment

Internal and External

```
int UF_DRPOS_set_position
(
    UF_DRPOS_id_t drpos,
    double pos [ 3 ]
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
double	pos [3]	Input	Coordinates of cut or stepover drive position in absolute

UF_DRPOS_set_proj_vec [\(view source\)](#)

Defined in: `uf_drpos.h`

Overview

Writes projection vector data to a cut or stepover drive position (the coordinates used for this must be in relation to the absolute coordinate system). This function is available only for cut and stepover drive positions.

Environment

Internal and External

```
int UF_DRPOS_set_proj_vec
(
    UF_DRPOS_id_t drpos,
    double proj_vec [ 3 ]
)
```

<code>UF_DRPOS_id_t</code>	<code>drpos</code>	Input	Identifier for a DRPOS object
double	<code>proj_vec [3]</code>	Input	The projection vector

UF_DRPOS_set_tool_axis [\(view source\)](#)

Defined in: `uf_drpos.h`

Overview

Writes tool axis data to a cut or stepover drive position (the coordinates used for this must be in relation to the absolute coordinate system).

Environment

Internal and External

```
int UF_DRPOS_set_tool_axis
(
    UF_DRPOS_id_t drpos,
    double tool_axis [ 3 ]
)
```

<code>UF_DRPOS_id_t</code>	<code>drpos</code>	Input	Identifier for a DRPOS object
double	<code>tool_axis [3]</code>	Input	The tool axis

UF_DRPOS_set_user_data [\(view source\)](#)

Defined in: `uf_drpos.h`

Overview

Sets the user data area of a drive position.

Environment

Internal and External

```
int UF_DRPOS_set_user_data
(
    UF_DRPOS_id_t drpos,
    void * user_data
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
void *	user_data	Input	Pointer to user data

UF_DRPOS_set_zig_zag_dir [\(view source\)](#)

Defined in: uf_drpos.h

Overview

Writes zig_zag information to a cut drive position. The system allows the specification of separate tool axis data for zig and zag motions of a zig/zag cut pattern. The value of the zig_zag_dir determines which of the two possible tool axis specifications to use. Note: when only a single tool axis specification is used, this flag has no effect. (This function need only be called for zag-type cut motions, as the default direction is zig, which is set by the UF_DRPOS_create_cut). This function is only available for cut drive positions.

Environment

Internal and External

```
int UF_DRPOS_set_zig_zag_dir
(
    UF_DRPOS_id_t drpos,
    UF_DRPOS_zig_zag_dir_t zig_zag_dir
)
```

UF_DRPOS_id_t	drpos	Input	Identifier for a DRPOS object
UF_DRPOS_zig_zag_dir_t	zig_zag_dir	Input	The direction of zig/zag cuts 0= the cut is a zig cut (default) 1= the cut is a zag cut