

LifeCheck Technical Note

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Description: Directionally Lived Parts and Components

Directionally Lived Parts

Certain components are able to be lived in clockwise and counter-clockwise direction separately. Typically, this occurs with parts such as drive shafts, which are fitted to, and run on, the left hand side then right hand side of the chassis, or vice versa. The life of these directional components is split to allow a specified limit in one direction and the same limit in the opposite direction. LifeCheck includes support for this type of part using the Directional Lifting property which may be set for a part either as it is defined or later using Part Properties.

Setting a Part to be Directional

A Part may be set as being directional when creating the first instance of that part or later using Part Properties as shown below.

Properties of : TTL-DIRECTIONAL-ASSEMBLY

General Properties

Part No : TTL-DIRECTIONAL-ASSEMBLY Type : Assembly Mfr No :
Description : Directional Assembly Owner : <Select> Cost : 0.00
Part Class : <None> Template : <None>
☒ Is a Lived Part ☐ Part has Expiry Date ☐ Single Use ☒ Directional

General Checks Calibrations Service Sheets Batch/Issue Numbers Inventory Documents Notes Faults

No Part Image Set

Set Image Clear Drawing

Weighting Factor : <None>
Section :
Sub-Section :
☐ Display Custom Icon
accident.gif
Life Code : L0002 View...

Documents Folder : \ Folder
Parts Catalogue : View
Parts Catalogue Page No : 0

☐ RETIRED Service Sheets Save Cancel

When setting a Part to be directional, LifeCheck first request confirmation of the action and then will check all components instances of the part as they also will become directional. Any components which have already run or are currently located on a chassis MUST have a direction set for them. In this case the following window will be displayed :-

Set Component Direction for Part 'TTL-DIRECTIONAL-ASSEMBLY'

Please set a Direction for the Components listed below. If any of these components also have directional children, their direction will also be set (if possible).

Life Code	Location	Distance Run	Direction
L0002	Admin\Race Team	0.00	Not Set
L0003	Admin\Race Team	0.00	Not Set
L0004	Admin\Race Team	0.00	Not Set
L0005	TTL2022-01	10.50	Not Set
L0006	Admin\Race Team	104.96	Not Set
L0007	Admin\Race Team	0.00	Not Set
L0008	Admin\Race Team	10.50	Not Set
LCHK01	Admin\Stores 2	0.00	Not Set

Certain components are highlighted yellow, these indicate those which must have a direction set before proceeding as they either have run or are on a chassis. Cancelling from this window will also cancel saving the change to the Part itself. Once a direction has been set for all required components, click OK to continue. This will also exit from Part Properties.

In a similar manner, un-checking the **Directional** flag for a part will, after confirmation, update all component instances of that part and clear their directional flag and any direction set. Note that this will also lose any knowledge of any previous direction set and as such the life limit may be affected. As this operation cannot be reversed, please take care when re-setting the directional attribute of a part.

Directional Components

Once a part has been set as Directional, all component instances of that part also become directional, this includes any components created later. By default, components will be created with a direction of 'Not Set' unless they are created directly on a chassis in which case the appropriate direction must be set at the time of creation. Both assemblies and standard components may be defined as directional but note that directional assemblies will normally only contain sub-assemblies or standard components which have the same direction set. This is enforced when the assembly is located on a chassis.

Components may have a direction set of 'Not Set', 'Left' or 'Right' however a component will normally only be permitted to change direction once. This does not include changes from 'Not Set' however. Take as an example the following Component..

TTL-DIRECTIONAL-001 Life Limit 1000

In this case we say that the component has a life limit of 1000km in EITHER direction but any life remaining in one direction will not carry over into the opposite direction.

So if the component is set to be 'Left' and runs for 900km and is then switched to 'Right' the distance run remains at 900km but the Life Limit is increased to 1900km to allow for an additional 1000km run as right hand. Once switched to right hand the component becomes **Direction Locked** and cannot be changed back to 'Left' **UNLESS** it has not been run yet as a right-handed component in which case it can still be changed back to left. This is to allow for the occasional mistake being made with the direction for a component being changed accidentally. The direction for a Direction locked component will be coloured red when displayed whether in the main views or within Component Properties.

Any changes in direction will be logged to the history of the component being updated and will include the mileage at which the change took place. These history records are not removed if a direction change is reversed owing to an error as above.

Adding Directional Components on to a Chassis

The basic rules here are that all Directionally Lified components on a chassis must have a direction set and this direction must correspond with any parent directionally lifed assembly. These rules are enforced by LifeCheck when placing a component on a chassis either from any of the main views or using the Chassis Builder Select, Swap and Quick Swap functions.

If an attempt is made to put a directionally lifed component on to a chassis LifeCheck will :-

Check if the Component has a Direction already set and if not will set the direction as appropriate - where there is a directionally lifed parent assembly, the component be set automatically to the same direction as its parent, otherwise LifeCheck will ask the user which direction is to be set.

If the Component already has a direction set, LifeCheck will ensure that this direction matches that of any directionally lifed parent assembly. If not, LifeCheck will try to change the direction of the component to match that of the parent assembly by checking both the component and any sub-components to ensure they can have their direction changed (they may have a different direction and be directionally locked). If a direction change is valid, it will be performed and if not, an appropriate error will be displayed, and the component will not be placed on the chassis.

Changing the 'Current Direction' value of a component in an assembly will change all components beneath that component to the same value. Again, LifeCheck will validate any child components within the assembly and warn / prompt for confirmation, if any of the child components would have their 'Current Direction' changed.

LifeCheck will prevent components having different 'Current Direction' values set in the same assembly at the point at which the assembly is located on a chassis. It is possible for this situation to occur within spares locations.

LifeCheck will prevent components changing 'Current Direction' value to 'Left' to 'Right' to 'Left' again. Or 'Right' to 'Left' to 'Right' again. In other words, it may only change direction once.

Adding Sessions to Directionally Lified Components

Sessions are added to directionally lifed components as a result of their being placed on the chassis, the only additional effect is that once a session has been added in the selected direction, that direction becomes 'locked' that is it cannot be changed without affecting life limits and if a previous change of direction has been recorded, cannot be changed.

Adding Missed Sessions to Directionally Lifed Components

As with other components, it is always possible that a mistake has been made and a session needs to be added (or removed) from a directionally lifed component retrospectively. When adding a missed session to a directionally lifed session, LifeCheck must take into account any changes in direction which may have taken place AFTER the date of the session being added.

The reason for this is that it may affect the life limit of the component as this takes into account the distance run by the component at the time of the direction change and adds on the original life limit to allow for running in the opposite direction. The total limit however must not exceed double the original limit as shown in the table below.

Life Limit	Direction Changed At	New Limit
1000	900	1900
1000	1000	2000
1000	1100	2000