

Gro-Mars

Game Overview: Gro-Mars

A gro-dome has been built on Mars in order to alleviate a food shortage. Two alliances of three teams each rush their gro-bots to take plants from a cargo drop and place them in the vertical hydroponic farms and on gro-beds before they freeze. The vertical hydroponic farms are designed to swing if disturbed which causes the plants to have stronger stems. Teams must be wary of the sprinklers in the gro-dome as gro-bots could become damaged. At the end of the match, alliances compete over a special yield-increasing fertilized gro-bed. They also store their gro-bots in or on top of the gro-bay as there is limited space inside the gro-dome. The alliance who grows the most plants to produce food wins.

The match has a duration of 2:45 and is structured in this way:

- 15 second autonomous period: Gro-bots run premade programs.
- 2 minute teleoperated period: Gro-bots operate under driver control.
- 30 second endgame:
 - 15 second teleoperated period.
 - 15 second autonomous period.

This section describes the tasks gro-bots may execute and when they can occur.

- 15 second initial autonomous period:
 - Gro-bots may move from the initiation line.
 - Gro-bots may place preloaded plants on vertical hydroponic farms or on gro-beds.
 - Gro-bots may retrieve plants from the cargo drop.
 - Gro-bots may move their alliance gro-bed.
- 2 minute teleoperated period:
 - Gro-bots may retrieve plants from the cargo drop.
 - Gro-bots may place plants on gro-beds and on vertical hydroponic farms.
 - Gro-bots may move their alliance gro-bed.
- 30 second endgame:
 - 15 second teleoperated endgame:
 - Gro-bots may retrieve plants from the cargo drop.
 - Gro-bots may place plants on gro-beds and on vertical hydroponic farms.
 - Gro-bots may move all gro-beds.
 - Gro-bots may park upon the gro-bay.
 - Gro-bots may hang from the gro-bay.
 - Gro-bots may sit under the gro-bay.
 - 15 second autonomous endgame:
 - Gro-bots may retrieve plants from the cargo drop.

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Teams must consider that:

- Points are increased in both autonomous periods and are at their greatest during the endgame autonomous period.
- Plants on gro-beds will not be scored unless they exist inside the gro-bay and are supported only by the gro-bed.
- Plants on vertical hydroponic farms will be scored immediately, however any points gained will be subtracted if the plant is removed.
- The gro-bay has a limited amount of space which should be used to its fullest.
- The sprinklers may entangle unprotected gro-bots.
- The chains on vertical hydroponic farms will swing and twist if disturbed. Higher levels exhibit this to a greater extent.
- The alliance with the most points at the end of the match wins.