

Title (en)

Drive unit for power operated vehicle closure

Title (de)

Motorbetriebene Antriebsvorrichtung für ein Schliesselement eines Fahrzeuges

Title (fr)

Dispositif motorisé d'entraînement d'un élément de fermeture de véhicule

Publication

**EP 1359277 B1 20080528 (EN)**

Application

**EP 03075915 A 20030331**

Priority

US 37335602 P 20020417

Abstract (en)

[origin: EP1359277A1] A drive unit 20 for a power operated vehicle closure 12 has a track 24, a guide 26 moveable along the track, a link 34 attached to the guide at one end and adapted to be attached to the vehicle closure at the opposite end, and a motor assembly 22 for moving the guide along the track. The motor assembly 22 has an electric motor 36 and a speed reducer driven by the electric motor that has a first stage and a second stage. The first stage includes a belt drive 40, 42, 44 and the second stage is a spur gear set 46, 48. Alternatively the first stage is a worm gear 140 and a mating helical gear 142. The worm gear preferably has a high lead angle and a high number of leads. The speed of the electric motor is reduced to about 1000 rpm or less in the first stage permitting the use of spur gears in the second stage while retaining quiet operation.

IPC 8 full level

**E05F 15/12** (2006.01)

CPC (source: EP)

**E05F 15/627** (2015.01); **E05F 15/63** (2015.01); **E05Y 2201/636** (2013.01); **E05Y 2201/646** (2013.01); **E05Y 2201/652** (2013.01); **E05Y 2201/654** (2013.01); **E05Y 2201/656** (2013.01); **E05Y 2201/66** (2013.01); **E05Y 2201/71** (2013.01); **E05Y 2400/3014** (2024.05); **E05Y 2600/10** (2013.01); **E05Y 2900/546** (2013.01); **E05Y 2900/548** (2013.01)

Cited by

EP1645708A3; DE102009001667A1

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

**EP 1359277 A1 20031105**; **EP 1359277 B1 20080528**; DE 60321263 D1 20080710

DOCDB simple family (application)

**EP 03075915 A 20030331**; DE 60321263 T 20030331