

(12) PATENT APPLICATION PUBLICATION

(21) Application No.7157/DELNP/2013 A

(19) INDIA

(22) Date of filing of Application :12/08/2013

(43) Publication Date : 23/01/2015

(54) Title of the invention : POWER TRANSMISSION DEVICE

(51) International classification :G01M13/02
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :PCT/JP2011/001430
Filing Date :11/03/2011
(87) International Publication No :WO 2012/123983
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)Name of Applicant :
1)TOYOTA JIDOSHA KABUSHIKI KAISHA
Address of Applicant :1 Toyota cho Toyota shi Aichi 4718571
Japan
(72)Name of Inventor :
1)OMURA Seiji
2)NISHIURA Hiroyuki

(57) Abstract :

Disclosed is a power transmission apparatus constructed to detect the deterioration state of a timing belt in use, thereby making it possible to detect at a high accuracy whether or not the timing belt reaches an exchanging time. The power transmission apparatus 1 comprises a crankshaft pulley 41 provided on a crankshaft 11, 10 an intake camshaft pulley 43 provided on an intake camshaft 22, and a timing belt 46 wound around the crankshaft pulley 41 and the intake camshaft pulley 43. The timing belt 46 contains a stress light emission material capable of emitting light when receiving an external force. The power transmission apparatus 1 further comprises an optical sensor and an ECU 4. The optical sensor is disposed in face-to-face relationship with 15 the timing belt 46 to measure light emitted from the timing belt 46. The ECU 4 is operative to judge whether or not the timing belt is deteriorated and to judge that the timing belt 46 reaches the exchanging time when the timing belt is judged to be deteriorated.

No. of Pages : 36 No. of Claims : 4