

PROTOTYPE DESIGN COLLECTION

SERIES 1



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CHAPTER 98

Portable Dry Leaf Sweeper Powered by a Single Motor

Siti Nurdyana Binti Mazlan and Wan Muhammad Syahmi Wan Fauzi

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PROJECT DESCRIPTION

Residential landscaping is the art of enhancing the aesthetic appeal and look of the space surrounding a home. Regardless of how beautiful the tree planting is, there are problems like dry leaves falling everywhere. People only clean the dried leaves with the traditional method of sweeping with a broom, which takes a lot of work regularly. Most machines on the market are not portable in size and are not reasonably priced. Therefore, a portable dry leaf sweeper must be designed and developed. This product will go through a design selection process and is required to create an isometric view using state-of-art SolidWorks. The designed leaf sweeper will work on electricity and will consist of simple fabrication as a proof of concept. Analytical and finite element analysis of the critical parts shall be carried out. Having this machine shall help to keep the residential areas clean especially surrounding the user house yet reduce the work intensity. As a result, the production of this product can run smoothly and successfully achieve the objectives. This machine has been shown to save energy when sweeping at different surface areas and is cost-effective. A few suggestions will be listed to produce more improvements.

Keywords: *Portable, Dry leaf, Sweeper*

PROTOTYPE



DESIGN PARAMETER

FAKULTI KEJURUTERAAN MEKANIKAL (FKM) UNIVERSITI TEKNOLOGI MARA (UITM) JOHOR KAMPUS PASIR GUDANG				
Course Name	MEC300 - FINAL YEAR PROJECT 2 SESSION: OCTOBER 2021 - FEBRUARY 2022			
Group	J4EM1105L			
Approved	Checked	Drawn SHAHIDULLOHA BINTI MAJLIS 11/07/2022		
Drawing Title	ASSEMBLY OF PORTABLE DRY LEAF SWEEPER POWERED BY A SINGLE MOTOR			
Part Name	-			
Part No.	-			
Rev.	Scale	Projection	Weight	Sheet
0	1:5	-	1 kg	9/13

ITEM NO.	PART NUMBER	QTY.
1	BODY PART	1
2	TOP PART	1
3	BODY (SIDE)	1
4	ROTATING BRUSH	1
5	WHEEL SHAFT	4
6	BATTERY FULL	1
7	DC MOTOR	1
8	WHEEL	4
9	45-DEGREE ELBOW	1
10	SHAFT	1
11	SWITCH	1
12	HANDLE	1
13	BATTERY COVER	1

FAKULTI KEJURUTERAAN MEKANIKAL (FKM) UNIVERSITI TEKNOLOGI MARA (UITM) JOHOR KAMPUS PASIR GUDANG				
Course Name	MEC300 - FINAL YEAR PROJECT 2 SESSION: OCTOBER 2021 - FEBRUARY 2022			
Group	J4EM1105L			
Approved	Checked	Drawn SHAHIDULLOHA BINTI MAJLIS 11/07/2022		
Drawing Title	EXPLODED ASSEMBLY OF PORTABLE DRY LEAF SWEEPER POWERED BY A SINGLE MOTOR			
Part Name	-			
Part No.	-			
Rev.	Scale	Projection	Weight	Sheet
0	1:7	-	1 kg	13/13