

FABRICATION OF WALKING CYCLE

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Abstract - An overview of bicycle and rider kinematic motions from a series of experimental treadmill tests is presented. The full kinematics of bicycles and riders were measured with an active motion capture system. Motion across speeds are compared graphically with box and whiskers plots. Trends and ranges in amplitude are shown to characterize the system motion. This data will be used to develop a realistic biomechanical model and control model for the rider and for future experimental design.

Key Words: TREADMILL, GEARS, TRANSMISSION SYSTEM, CYCLE, BIKE, BICYCLE, ROLLATOR.

1. INTRODUCTION

Our aim is to make a cycle run through a manual treadmill such that in a very less effort more work can be done. As we all know a manual treadmill does not consume any electricity, thus using treadmill and some arrangements of gears and chain drive, we will make a treadmill cycle. With a very less effort this bicycle can be driven as well as a new format of the bicycle design can be launched in the market. The treadmill cycle is driven manually, more or less the same effort is required to drive the bike as the effort required in treadmill, consisting of various gear arrangements and two shafts provided to change the motion. The treadmill cycle will be the best in its segment.

1.1 TREADMILL

Treadmills are not used to harness power, but as exercise machines for running or walking in one place. Rather than the user powering the mill, the machine provides a moving platform with a wide conveyor belt driven by an electric motor or a flywheel. The belt moves to the rear, requiring the

user to walk or run at a speed matching that of the belt. The rate at which the belt moves is the rate of walking or running. Thus, the speed of running may be controlled and measured

1.2 WORKING OF TREADMILL CYCLE

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2. TREADMILL MECHANISM

The treadmill is used for walking on it, the motion is transferred by the belt as we walk on it, moreover the motion is also transferred by the shaft. The gears reversing the motion and transferring to countershaft, hence the rear wheel moves as simple as moves in bicycle.



Fig -1: WALKING CYCLE

TREADMILL CYCLE, GEARS, BEARINGS, SHAFT, COUNTERSHAFT, REAR WHEEL ATTACHMENT, SPROCKET, CHAIN STEERING ATTACHMENT.

3. CONCLUSIONS

The Treadmill Bike has a variable resistance feature which means people of all ages with a semblance of balance and fitness should be able to ride the device. It is used to reduce the manual effort i.e. in place of conventional cycle, this walking cycle will give more displacement in a very less effort. The WALKING CYCLE has a variable resistance feature which means people of all ages with a semblance of balance and fitness should be able to ride the device. We featured the WALKING CYCLE. The WALKING CYCLE has only two wheels, looks a little more robust and lets you take it "off road" according to its design.

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REFERENCES

- [1] WankV, FrickU, SchmidtbleicherD
AbteilungBiomechanik,
InstitutfürSportwissenschaft der Friedrich-
Schiller-Universität Jena, Germany; veit.wank@uni-
jena.de Type: Clinical Trial, Journal Article,
Randomized Controlled Trial, Comparative Study
- [2] International Journal of Sports Medicine [1998,
19(7):455-461] M. Young, The Technical Writer's
Handbook. Mill Valley, CA: University Science,
1989.
- [3] Jason K. Moorea, Mont Hubbarda, A. L. Schwabb, J.
D. G.Kooijmanb & Dale L. Petersona; Statistics of
Bicycle Rider Motion;
- [4] Copeland BL, Franks BD; Department of Physical
Education and Dance, University of Tennessee.
Type: Clinical Trial, Journal Article, Randomized

Controlled Trial. The Journal of Sports Medicine
and Physical Fitness [1991, 31(1):100-103]

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