



SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai



DEPARTMENT OF AGRICULTURE ENGINEERING

19AGB301-FARM TRACTORS

III YEAR V SEM

Topic : TRACTOR HITCHING



Tractor hitching

- "A three-point hitch attaches the implement to the tractor so that the orientation of the implement is fixed with respect to the tractor and the arm position of the hitch. The tractor carries some or all of the weight of the implement."



Three-point hitches are composed of three movable arms. The two lower arms—the hitch lifting arms—are controlled by the hydraulic system, and provide lifting, lowering, and even tilting to the arms. The upper center arm—called the top link—is movable, but is usually not powered by the tractor's hydraulic system. Each arm has an attachment device to connect implements to the hitch.





There are five different hitch sizes, called categories. The higher category hitches have sturdier lift arms and larger connector pins.

Category	Tractor power	Top link pin diameter ^[a]	Lift arm pin diameter	Lower hitch spacing
0	Up to 20 hp (15 kW)	5/8 in (16 mm)	5/8 in (16 mm)	20 in (510 mm)
1	20 to 45 hp (15 to 34 kW)	3/4 in (19 mm)	7/8 in (22 mm)	28 in (710 mm)
2	40 to 100 hp (30 to 75 kW)	1 in (25 mm)	1 1/8 in (29 mm)	34 in (860 mm)
3	80 to 225 hp (60 to 168 kW)	1 1/4 in (32 mm)	1 7/16 in (37 mm)	40 in (1,000 mm)
4	More than 180 hp (134 kW)	1 3/4 in (44 mm)	2 in (51 mm)	48 in (1,200 mm)



Different hitch sizes



Adjustable three-point ball on lift arm. Ball may be rotated to fit either Category I or II implements



Rear three-point hitch of a Case IH tractor with implement attached by the drawbar



History of hitching



Before the 1940s, most hitching of farm implements to tractors was done simply with a drawbar, on the same principle as a modern tow hitch. The drawbar was a flat bar with holes in it, and the implements were trailers, with tongues that attached to the drawbar with a pin through a hole. The main reason why this was the default hitching idea is that it was the natural follow-on from the days of horse-drawn implements, which were towed as trailers by the horse or team (and often had an operator's seat). In fact, for decades during the mechanisation of agriculture in Europe and North America, as tractors gradually replaced horses in increasing degrees, existing implements from the horse era were often what the tractor pulled. Towing with a drawbar is a good, practical system for many purposes, and it has continued to be used even up to today, but the three-point hitch outperforms it in several ways (described below).



What are the types of hitching?

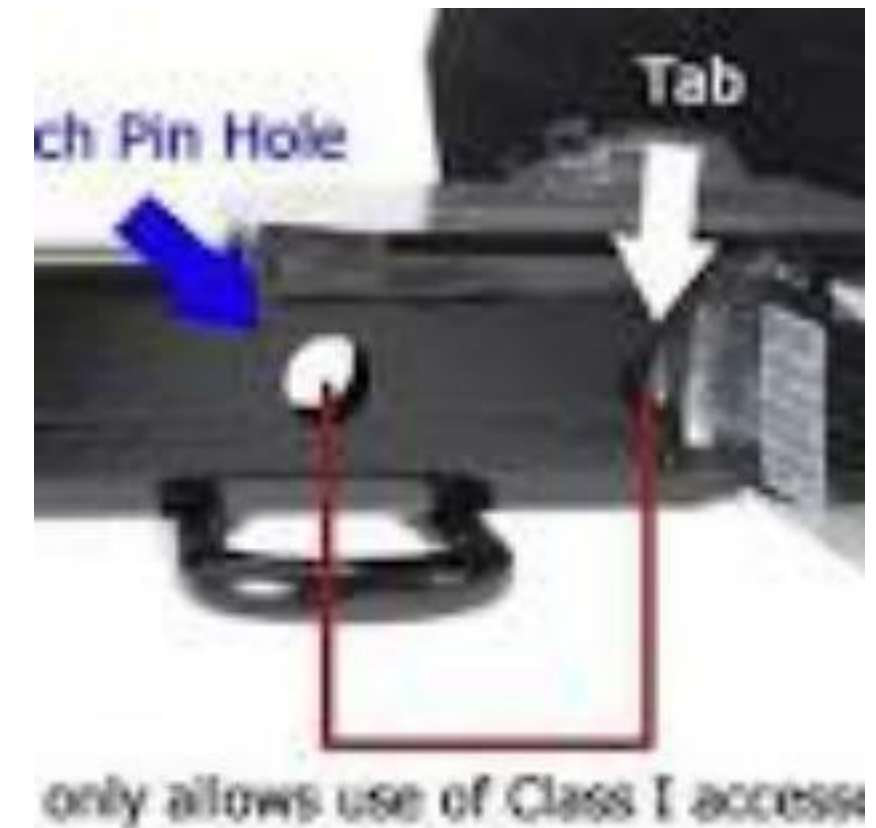
There are two types of hitching systems,

- Horizontal hitching of the implement: Horizontal hitching of the implement depends upon the design of the implements.
- Vertical hitching of the implement: vertical hitching is adopted for the implements that have wheels or runners.



Two Hitch Size

- The two most common sizes of trailer hitch receivers are 1-1/4" and 2".
- **1-1/4" - Class I and Class II Hitches. ...**
- **Why** won't **my 1-1/4" accessories fit in my 1-1/4" receiver opening? ...**
- **2" - Class III and Class IV Hitches.**





Limited Category 1 3-Point Hitch

You may notice some sub-compact tractors, such as the John Deere 1 Series, have a "limited" category 1 hitch. This indicates that **the hitch is lower to the ground and may not lift as high or open as wide as standard full-size category 1 hitches**





What is a tractor weight??

Tractor weight means the combined weight of the protective frame or enclosure, all fuels, and other components required for the normal use of the tractor. Sample 1 Sample 2.



YOUTUBE REFERENCE

<https://www.youtube.com/watch?v=8hEaAw7k3WM>

I thank You!

