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Lawn and garden ride-on (riding) tractors — One-point tubular sleeve hitch

Tracteurs de jardin et de pelouse à conducteur porté — Attelage tubulaire un point

Reference number
ISO 9192:1991(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9192 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*.

Annex A of this International Standard is for information only.

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Lawn and garden ride-on (riding) tractors — One-point tubular sleeve hitch

1 Scope

This International Standard specifies the requirements for the connection of implements or attachments to the rear of lawn and garden ride-on (riding) tractors by means of a one-point (single pin connection) hitch in association with a manual or power lift system. Standard dimensions for hitch point location, hitch tube and implement yoke are laid down to ensure the connection of specific implements or attachments.

It applies to lawn and garden ride-on (riding) tractors as defined below.

2 Definitions

For the purposes of this International Standard, the following definitions apply.

2.1 ride-on (riding) machine; lawn and garden tractor; turf (riding) tractor: Self-propelled machine on which an operator rides, designed primarily for cutting grass and auxiliary garden work. The cutting means may be an integral part of the machine or suspended from or attached to the machine.[1)]

2.2 General (see figure 1)

2.2.1 hitch point ①:

a) Pivotal point of connection of hitch to tractor.

b) Actual point of connection to tractor when implement is attached.

2.2.2 implement yoke ②: Clevis-shaped part attached to implement, constructed to fit loosely to hitch tube and secured by hitch pin.

2.2.3 implement connection point ③: Connection between the hitch and implement.

2.3 Hitch components (see figure 1 and figure 2)

2.3.1 hitch pin ④: Pin that connects implement to the hitch.

2.3.2 hitch tube ⑤: Tube portion on the hitch which receives the implement yoke.

2.3.3 hitch bail ⑥: Portion of the hitch assembly containing hitch tube, stabilizer bolts, and holes for connection to tractor frame at hitch point.

2.3.4 stabilizer bolt ⑦: Bolt that is used for adjusting clearance between hitch bail and implement yoke.

1) For the convenience of the user of this International Standard, this definition is repeated from ISO 5395:1990 (definition 1.3.40).

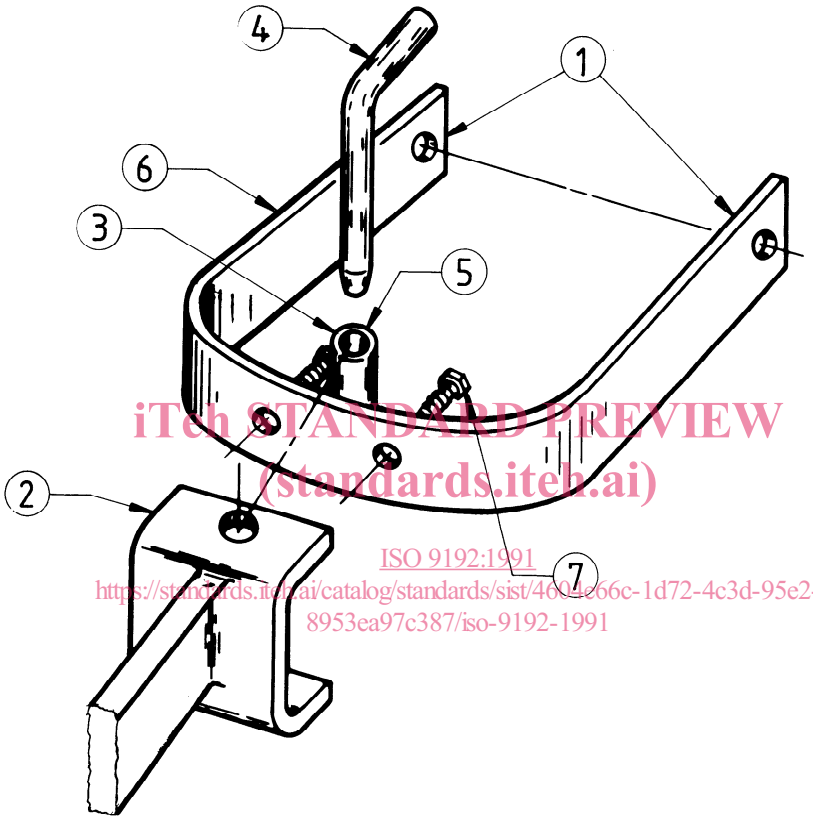

Figure 1 — Typical one-point tubular sleeve hitch

2.4 Hitch dimensions (see figure 2)

2.4.1 lift range: Range of vertical adjustment plus the power range. Adjustment may be provided in the lift linkage, hitch point or both.

2.4.2 power range: Total vertical movement of the hitch measured at the hitch tube and excluding any vertical adjustment in the hitch lift linkage.

2.4.3 attaching point/tyre clearance: Horizontal dimension between the centreline of the hitch tube and the outside diameter of the tractor tyre when the hitch is lowered.

2.4.4 implement levelling: Means provided for adjusting the implement for level operation while working, generally accomplished by adjustments built into the implement where required. Levelling may also be provided within the adjustment of the lift linkage and hitch point.

2.4.5 attachment: Optional assembly of components that can be mounted on a lawn and garden ride-on (riding) tractor for a specific use.

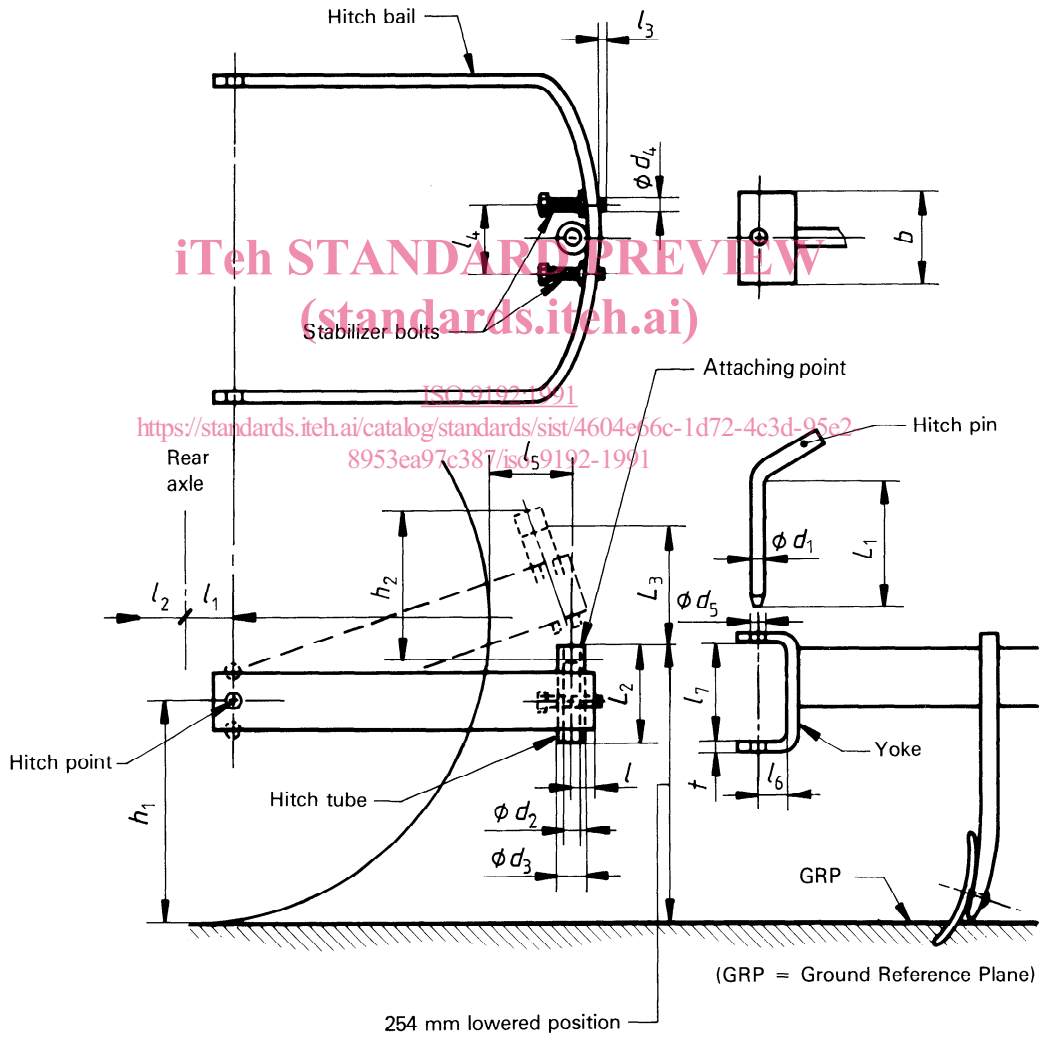

Figure 2 — Hitch and yoke dimensions

3 Dimensions

3.1 Implement

Dimensions relating to the implement shall be as given in figure 2 and table 1.

NOTES

1 Means should be provided in implement design to allow levelling of implement when at its normal working depth.

2 When implement mass adversely affects the lengthwise stability of the tractor, front end ballast should be made available and its use recommended.

Table 1 — Implement dimensions

Dimensions in millimetres

Symbol	Measurement	Dimension	
		min.	max.
l_6	Centre of hole to inside edge	32	36
d_5	Hole diameter — 2 holes in line	17	18
l_7	Vertical depth inside	90	92
b	Width	100[1)]	—
t	Thickness	6[2)]	13

1) 100 mm min. dimension applies only to implements requiring side stabilization.

2) Recommended thickness.

3.2 Tractor

Dimensions relating to the tractor hitch shall be as given in figure 2 and table 2.

4 Tractor lift force capacity

A minimum lift force of 1,8 kN shall be available at the implement-attaching point.

5 Manual lift effort

Lift handle effort should not exceed 180 N.

6 Stabilizer bolts

In addition to the dimensional requirements specified in table 2, locking means, e.g. jam nuts, should be provided.

Table 2 — Tractor hitch dimensions

Dimensions in millimetres

Symbol	Measurement	Dimension	
		min.	max.
	Hitch point:		
h_1	Vertical height from ground, (200 recommended)	180	230
	Horizontal distance from centreline rear axle		
l_1	— rearward	—	250
l_2	— forward	—	75
	Hitch pin:		
d_1	Diameter	15	16
L_1	Straight portion length	130	—
	Hitch tube:		
d_2	Inside diameter	17	18
d_3	Outside diameter	25	—
L_2	Length	82	86
l	Centre of hitch tube to rear of bail	—	26
	Lift range:		
h_2	Recommended — only including power range	140	—
	Power range:		
L_3	Vertical travel from top of hitch tube when top of hitch tube is 254 mm from ground when lowered	90	—
	Stabilizer bolts (see also clause 6):		
d_4	Diameter	15	—
l_3	Adjustment	12	—
l_4	Spacing	60	70
l_5	Attaching point tyre clearance	75	—

Annex A
(informative)

Bibliography

[1] ISO 5395:1990, *Power lawn-mowers, lawn tractors, lawn and garden tractors, professional mowers, and lawn and garden tractors with mowing attachments — Definitions, safety requirements and test procedures.*

[2] ISO 9190:1990, *Lawn and garden ride-on (riding) tractors — Drawbar.*

[3] ISO 9191:1991, *Lawn and garden ride-on (riding) tractors — Three-point hitch.*

[4] ISO 9193:1990, *Lawn and garden ride-on (riding) tractors — Power take-off.*

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