



SURFACE VEHICLE STANDARD

J1111™

APR2024

Issued 1975-05
Revised 2013-09
Reaffirmed 2024-04

Superseding J1111 SEP2018

Component Nomenclature - Skidder - Grapple

RATIONALE

The references listed in section 2.1.1 are no longer accurate, and shall be revised to indicate proper referencing below:

- Reference SAE J1110 Specification Definitions – Articulated, Rubber Tired Log Skidder has been superseded by ISO 13861 – Machinery for forestry – Wheeled skidders - Terms, Definitions and commercial specifications.
- Reference SAE J1112 Specification Definitions – Skidder - Grapple has been superseded by ISO 13861 – Machinery for forestry – Wheeled skidders - Terms, Definitions and commercial specifications.

SAE J1111 has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

This SAE Standard characterizes grapple skidders and identifies the major components and parts most commonly associated therewith. Illustrations used herein are not intended to include all existing commercial machines or to be exactly descriptive of any particular machine. They have been included to facilitate application of this document.

2. REFERENCES

2.1 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.1.1 ISO PUBLICATION

Available from American National Standards Institute, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

ISO 13861 Machinery for Forestry – Wheeled Skidders – Terms, definitions and Commercial Specifications

3. CHARACTERISTICS

3.1 GRAPPLE ASSEMBLY

3.1.1 Long Arm (Figure 1)

Grapple arm cylinders are exposed and each operates the grapple arm on its side (left or right) of the grapple head.

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https://www.sae.org/standards/content/J1111_202404/

3.1.2 Single Cylinder Cradle (Figure 2)

Grapple arms are operated by a grapple arm cylinder and timing link which are enclosed.

3.1.3 Dual Cylinder Cradle (Figure 3)

Grapple arm cylinders are enclosed and each operates the grapple arm on the opposite side (left or right) of the grapple head.

3.2 BOOM ASSEMBLY

3.2.1 Single Function (Figures 4 and 5)

This configuration consists of a boom and dual cylinders. Grapple pivot movement is through a fixed arc.

3.2.2 Dual Arch (Figure 6)

This configuration consists of a boom and two arches. Dual hydraulic cylinders may be attached to either the front or rear arch. Grapple pivot movement is through a fixed path.

3.2.3 Dual Function (Figure 7)

This configuration consists of a boom, one arch, and two pairs of hydraulic cylinders which provide increased grapple pivot working range.

3.2.4 Swing (Figure 8)

This configuration consists of two booms and associated cylinders which provide both horizontal and vertical grapple pivot movement. A swing mast provides for rotation around a vertical axis to either side of the longitudinal centerline of the rear frame of the machine.

Each configuration may accommodate either type grapple (long arm or cradle arm), but either the grapple head or boom must incorporate a grapple rotator in order to achieve rotation of the grapple head.

Inclusion of a fairlead assembly is optional.

4. NOMENCLATURE

1. Grapple Swing Damper
2. Grapple Rotator Yoke
3. Grapple Pivot
 - a. Upper
 - b. Lower
4. Grapple Head
5. Grapple Arm Cylinder
6. Grapple Arm
7. Grapple Rotator
8. Timing Link
9. Boom Cylinder
10. Fairlead Assembly
11. Boom
12. Boom Pivot
 - a. Log Bumper Mounted
 - b. Frame Mounted
13. Front Arch
14. Arch Cylinder
15. Rear Arch
16. Swing Mast
17. Secondary Boom Cylinder
18. Secondary Boom Pivot
19. Secondary Boom

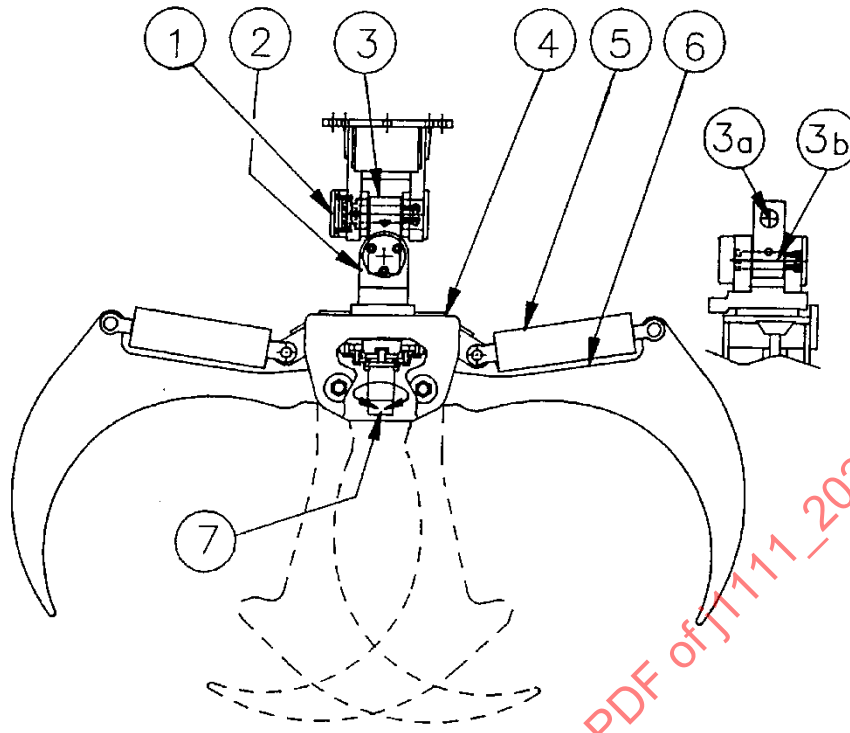


FIGURE 1 - LONG ARM GRAPPLE

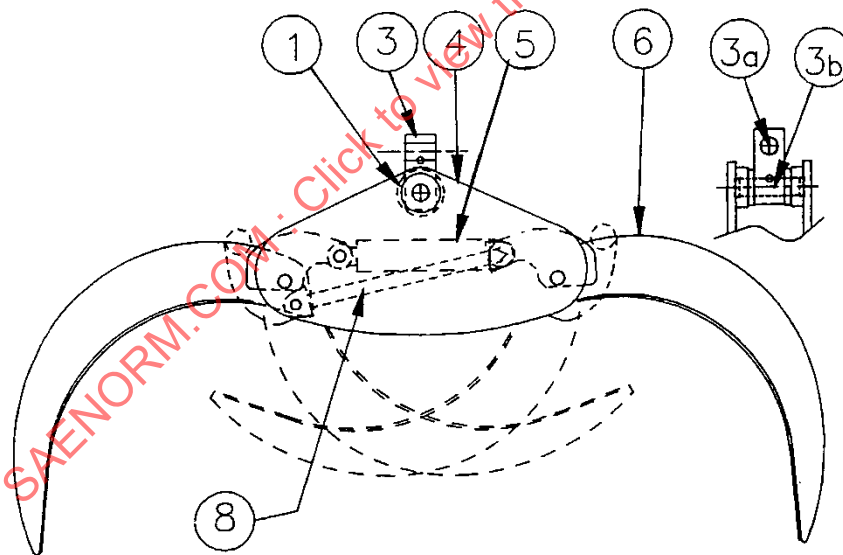


FIGURE 2 - SINGLE CYLINDER CRADLE GRAPPLE

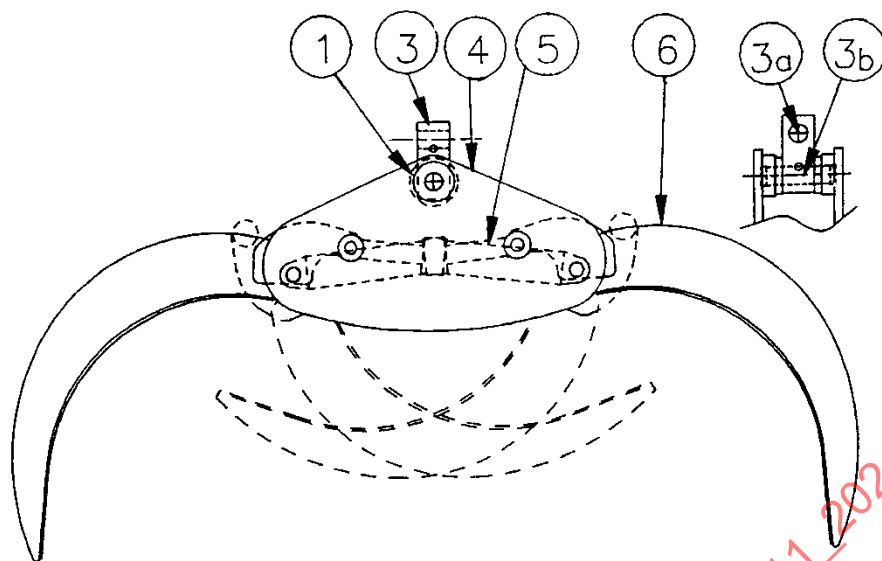


FIGURE 3 - DUAL CYLINDER CRADLE GRAPPLE

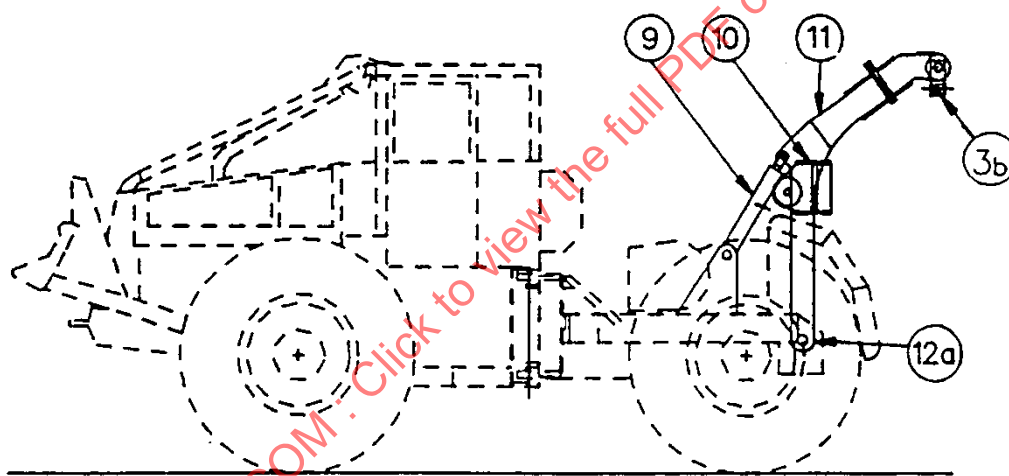


FIGURE 4 - SINGLE FUNCTION BOOM ASSEMBLY—LOG BUMPER MOUNTED

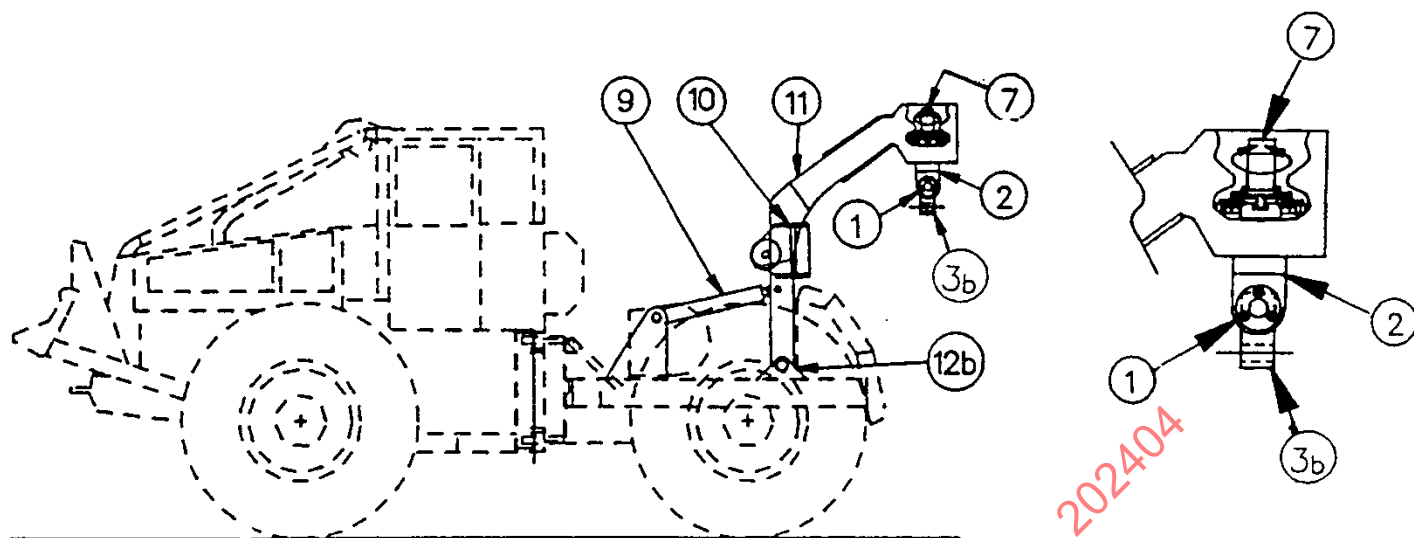


FIGURE 5 - SINGLE FUNCTION BOOM ASSEMBLY—FRAME MOUNTED

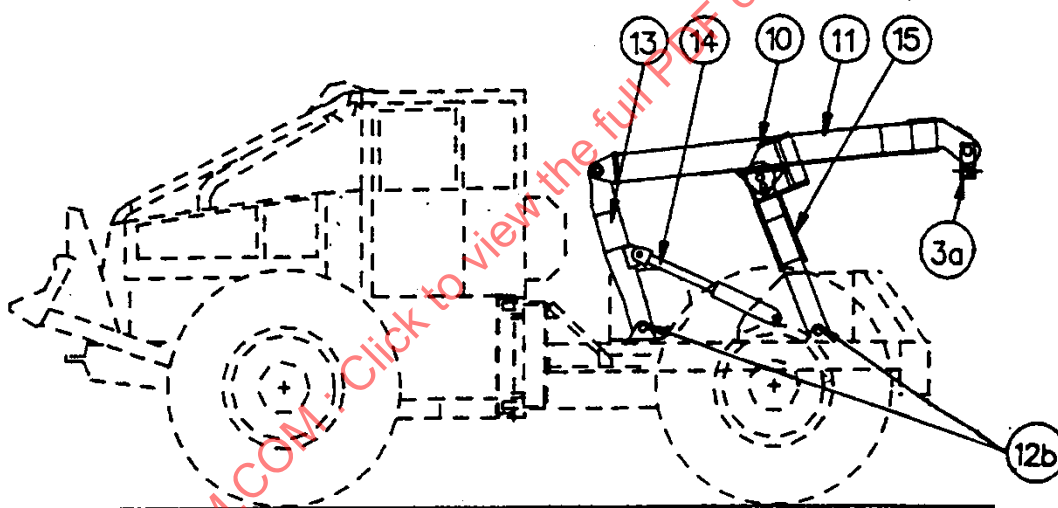


FIGURE 6 - DUAL ARCH BOOM ASSEMBLY