Massey Ferguson®

1533 / 1540
Compact Tractor

WORKSHOP SERVICE MANUAL
4283359M1

CONTENTS

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01 - General Information

Contents

GENERAL

INTRODUCTION

This service manual has been prepared with the latest service information available at the time of publication. Read the service manual carefully before doing any service on the machine. This manual is one of the most important tools available to the service technician.

Right-hand and left-hand, as used in this manual, is determined by facing the direction the machine will travel when in use.

The photos, illustrations, and data used in this manual were current at the time of printing, but due to possible production changes, your machine can vary slightly. The Manufacturer reserves the right to redesign and change the machine as necessary without notification.

WARNING: Some pictures in this manual show the machine with shields or guards removed to allow for a better view of the subject of the picture. All shields and guards must be in position before operating the machine.

TO THE DEALERS

This manual was developed to provide the best possible information, technical support and service to the customer. Review the Table of Contents and basic layout to become familiar with locations of pertinent information such as maintenance table, specifications and etc.

REPLACEMENT PARTS

To receive efficient service, always remember to give the dealer the following information:

- Correct part description or part number.
- Model number of your machine.
- Serial number of your machine.

UNITS OF MEASUREMENT

Measurements are given in metric units followed by the equivalent in US units. Hardware sizes are given in millimeters for metric hardware and inches for U.S. hardware.

TABLE OF CONTENTS

A Table of Contents is in the front of this manual. The Table of Contents shows the divisions. The individual divisions also have a Table of Contents.

PAGE NUMBERS

All page numbers are made of two numbers separated by a dash, such as 01-25. The number before the dash is the division number. The number following the dash is the page number in that division. Page numbers will be at the lower right or left of each page.

TRACTOR IDENTIFICATION

Model/Serial Numbers

FIG. 1: Chassis number (1) is stamped in right side of front frame.

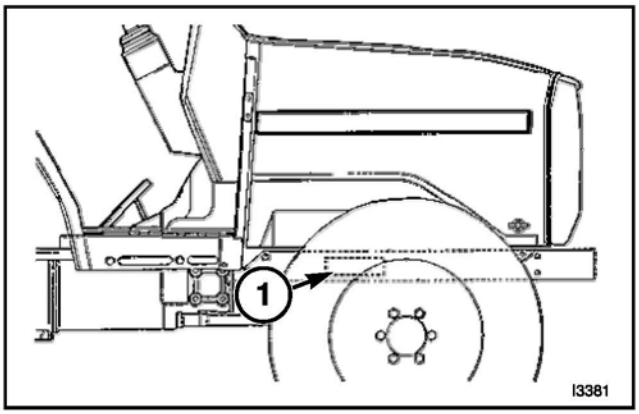

FIG. 1

FIG. 2: Engine model number (1) is cast on right side of engine block, below the injection pump.

Engine serial number (2) is stamped into cylinder block, below engine model number.

Engine Serial Number

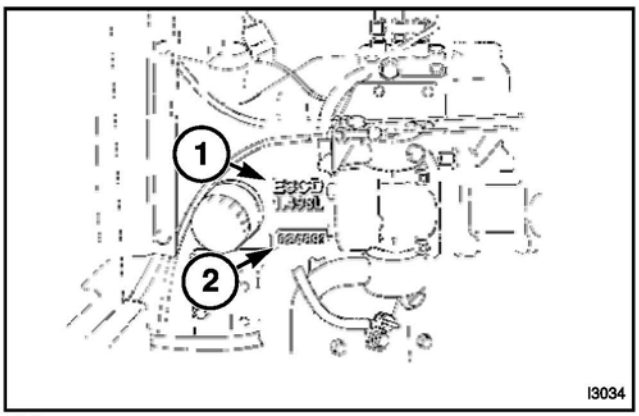

FIG. 2

FIG. 3: The tractor identification plate (1) is located below the operator's seat.

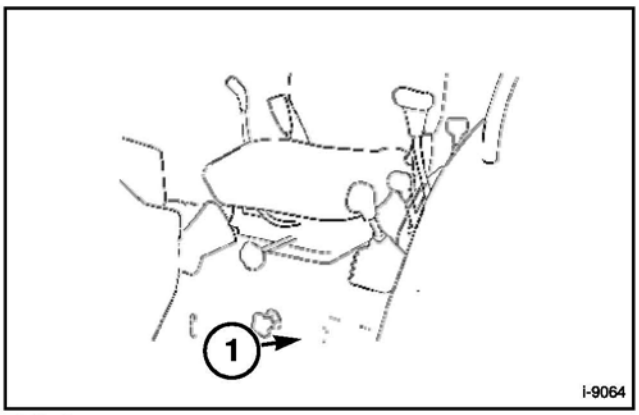

FIG. 3

SPECIFICATIONS AND CAPACITIES

GENERAL DIMENSIONS

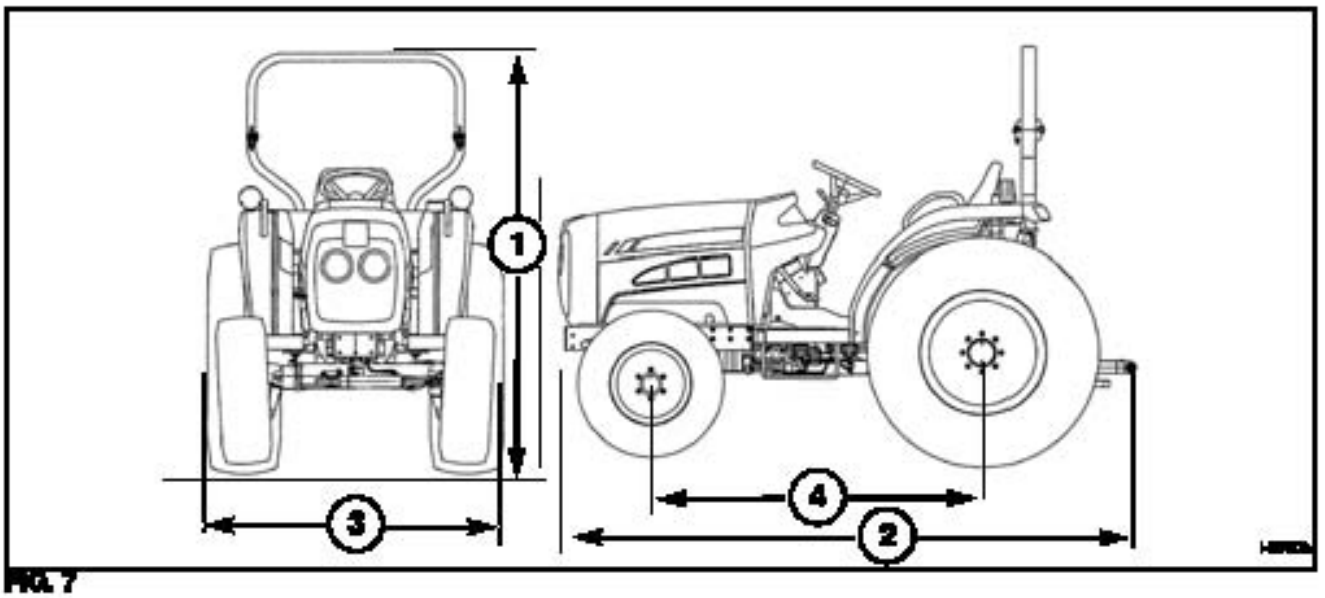

FIG. 7

FIG. 7: Non Cab Tractor Dimensions.

General Dimensions

Overall Height (1)	2209 mm (87 in)
Overall Length (2)	3070 mm (121 in)
Minimum Width (3)	
(Ag Tires)	1680 mm (66.1 in)
(Turf Tires)	1549 mm (61 in)
Wheelbase (4)	
33 Horsepower	1770 mm (70 in)
40 Horsepower	1770 mm (70 in)
Ground Clearance (Ag Tires)	360 mm (14 in)
Front Wheel Tread	
2WD	1120 mm (44.1 in)
33 Horsepower 4WD	1130 to 1271 mm (44 to 50 in)
40 Horsepower 4WD	1130 to 1271 mm (44 to 50 in)
Turning Radius	
With Brake	2500 mm (98 in)
Without Brake	3100 mm (122 in)
Weight	
33 Horsepower (4wd)	1375 kg (3031 lb)
40 Horsepower (4wd)	1380 kg (3058 lb)

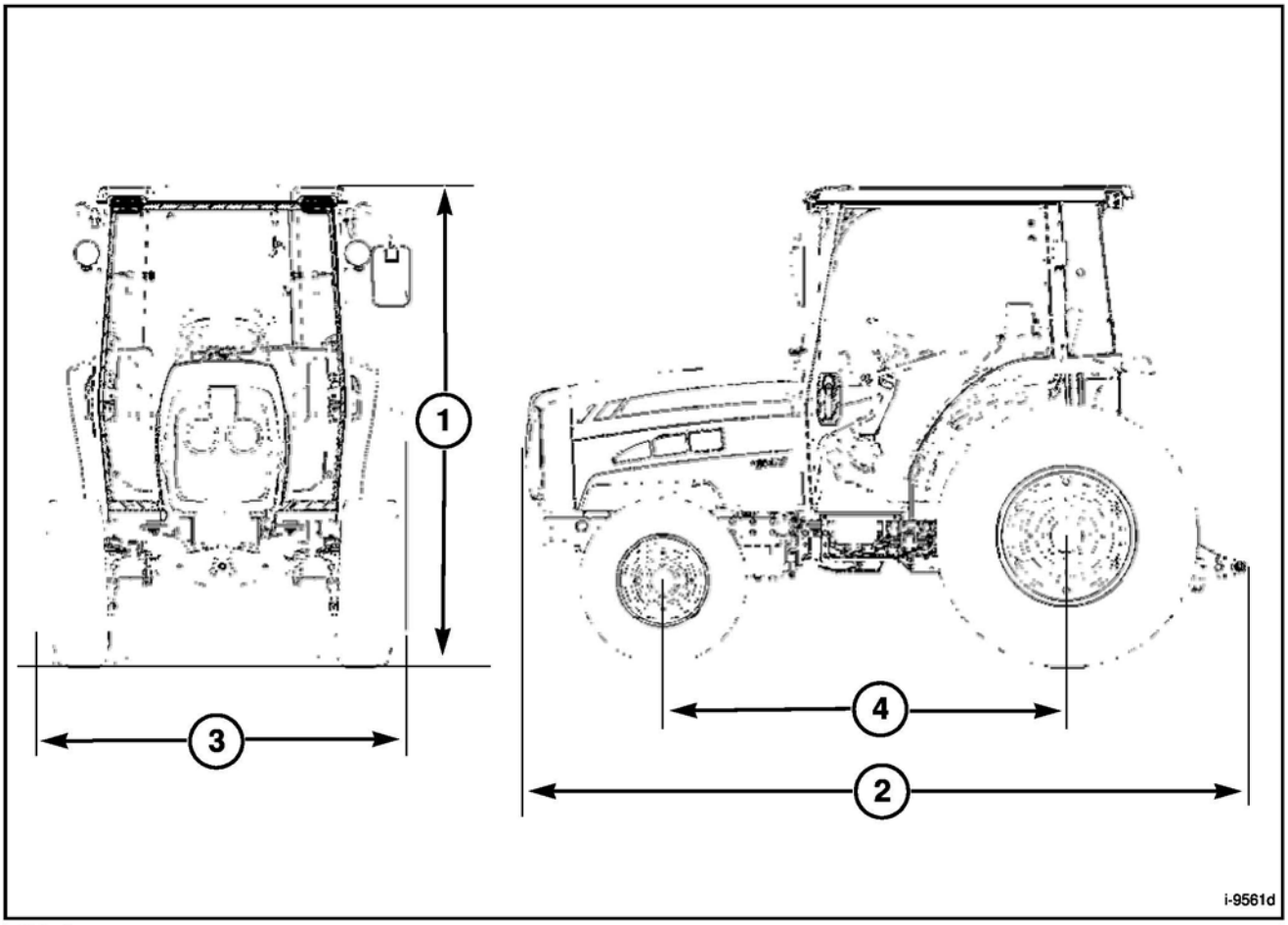

FIG. 8

FIG. 8: Cab Tractor General Dimensions.

Overall Height (1) (Ag Tires)	2220 mm (87.4 in)
Overall Length (2)	3070 mm (121 in)
Minimum Width (3)	
Ag Tires	1565 mm (62 in)
Turf Tires	1530 mm (60 in)
Wheelbase (4)	
33 Horsepower	1770 mm (70 in)
40 Horsepower	1930 mm (76 in)
Ground Clearance (Ag Tires)	360 mm (14 in)
Weight	
33 Horsepower	1535 kg (3384 lb)
40 Horsepower	1823 kg (4023 lb)
Front Wheel Tread	1130 to 1271 mm (44 to 50 in)
Rear Wheel Tread	1190 to 1495 mm (47 to 59 in)
Turning Radius With Brake	2500 mm (98 in)

Engine Oil

Use the appropriate SAE viscosity. Oil must meet or exceed MIL-L-46152 requirements, API Service CC.

Capacity (Crankcase and Filter) ..... 4.7 liters (5.0 US qt)

25 degrees C (78 degrees F) ..... SAE 30W, 1OW-30

Below 0 degrees C (32 degrees F) ..... SAE 20W, 1OW-30

0 to 25 degrees C (32 to 78 degrees F) ..... SAE 20W, 1OW-30

15W-40 may be used in ambient temperatures above -10 degrees C (14 degrees F).

Initial Oil and Filter Change ..... 50 hours

Oil and Filter Change, Thereafter ..... Every 100 hours

Engine Coolant

Freezing Protection (Original Factory Fill) ..... -34 degrees C (-30 degrees F)

Recommended Coolant ..... 50/50 mixture ethylene glycol and water

System Capacity ..... 7.6 liters (8.0 US qt)

Fuel Tank

Capacity ..... 50.0 liters (13.2 US gals)

Fuel Recommended, Above 4° C (39° F) ..... No. 2 or No. 2-D

Fuel Recommended, Below 4° C (39° F) ..... No. 1 or No. 1-D

Transmission & Differential Housing (Including Hydraulic System)

Capacity ..... 31 liters (8.2 US gals)

Recommended Lubricant ..... Permatran III or 821XL

Recommended Change Interval ..... First 50 hours, every 300 hours thereafter

Front Axle (4 WD)

Capacity (Common Reservoir) ..... 7.5 liters (1.9 US gals)

Recommended Lubricant ..... Permatran III or 821XL

Recommended Change Interval ..... First 50 hours, every 300 hours thereafter

Grease Fittings

Grease Interval (All Fittings) ..... Every 50 hours

Recommended Grease ..... Lithium multi-purpose grease EP2

NOTE: Change intervals stated above are for normal usage. Due to adverse operating conditions, that may be experienced (extremely dusty or muddy), change intervals may need to be more frequent.

Specifications And Capacities

Engine

Make ..... Iseki Diesel

Model

- 33 Horsepower E3CD
- 40 Horsepower E3CDT

Type ..... Indirect injection, overhead valve

Aspiration ..... Natural

Displacement

- 33 Horsepower ..... 2197 cu cm (134.05 cu in)
- 40 Horsepower ..... 2955 cu cm (180.29 cu in)

Number of Cylinders 3

Bore

- 33 Horsepower ..... 84 mm (3.30 in)
- 40 Horsepower ..... 84 mm (3.30 in)

Stroke

- 33 Horsepower ..... 92.4 mm (3.64 in)
- 40 Horsepower ..... 100 mm (3.94 in)

Engine Horsepower (Gross)

- 33 Horsepower @ 2600 rpm ..... 35.4 kw (47.5 hp)
- 40 Horsepower @ 2500 rpm ..... 38.9 kw (52.1 hp)

PTO Horsepower (Estimate)

- Power Shuttle / Electronic Transmissions
  - 33 Horsepower @ 568 PTO rpm ..... 19.4 kw (26.0 hp)
  - 40 Horsepower @ 568 PTO rpm ..... 23.1 kw (31.0 hp)

PTO Horsepower (Estimate)

- Hydrostatic Transmission
- 33 Horsepower @ 568 PTO rpm ..... 18.3 kw (24.5 hp)

Firing Order 1-3-2

Compression

- 33 Horsepower 21.7-1
- 40 Horsepower 21.7-1

Low Idle Speed

- 33 Horsepower ..... 980 to 1020 rpm
- 40 Horsepower ..... 980 to 1020 rpm

Valve Clearance (Cold) - Intake ..... 0.35 mm (.014 in)

Air Cleaner ..... Dual stage, dry element

Engine Cooling ..... Liquid, forced circulation

Cold Starting Aid ..... Glow plugs (4)

Transmission

Type

- Primary
  - Power Shuttle ..... 4-speed sycnhronized
  - Synchroshuttle ..... 4-speed constant mesh
- Range
  - Power Shuttle and Electronic ..... 3-speed sliding mesh
  - Synchroshuttle ..... 2-speed constant mesh
- Mechanical Shuttle ..... Elector-Hydraulic control with multi plates, wet disc, 95% reverse reduction

Gear Speeds

- All Synchroshuttle ..... 8 gears forward, 8 reverse
- All Powershuttle ..... 12 gears forward, 12 reverse

Clutch ..... 240 mm (9.4 in)

Front Wheel Drive Ratio 1.61184

Hydrostatic

Primary ..... Infinite

Range ..... 3-speed sliding mesh

Gear and Motor Speeds ..... 3 forward, 3 reverse

Clutch ..... None

Power Take Off (PTO)

Type ..... Independent, engine driven

Clutch ..... Hydraulically engaged, multi-plate wet disc

Rear PTO Shaft

- Output ..... Clockwise rotation
- Engine Speed @ 540 PTO rpm ..... 2430 rpm

Rear PTO; Six Spline Shaft Diameter ..... 35 mm (1.375 in)

Engine Speed @ 540 PTO rpm ..... 2430 rpm

Mid-PTO Shaft (Option)

- Shaft Size (15 Spline) ..... 25.4 mm (1.00 in)
- Output ..... Clockwise rotation
- Mid-PTO Speed @ 2600 Engine rpm ..... 1916 rpm

Specifications And Capacities

Hydraulics

Steering System

- Type ..... Hydrostatic
- Pump ..... Separate engine-mounted gear pump
- Maximum Output
  - 33 Horsepower Synchroshuttle and Hydrostatic ..... 18.5 lpm (4.9 US gpm)
  - 40 Horsepower Powershuttle ..... 22.7 lpm (6.0 US gpm)
- Pressure Relief Valve Setting ..... 7848 kPa (1138 psi)

Main Hydraulic System

- Pump ..... Engine-mounted
- Maximum Output
  - 33 Horsepower ..... 34.4 lpm (9.1 US gpm)
  - 40 Horsepower ..... 34.4 lpm (9.1 US gpm)
- Pressure Relief Valve Setting ..... 15,692 kPa (2276 psi)

Rear Linkage

- Type ..... Three-point hitch
- Size ..... Category I
- Lift Capacity Measured at Ball Ends ..... 1270 kg (2800 lb)
- Measured at 24 Inches ..... 1150 kg (2535 lb)

Electrical System

System Voltage ..... 12 volt, negative (-) ground

Battery cca @18°C (0°F) 630

Charging

- Non Cab ..... 40 amp alternator with internal regulator/rectifier
- Cab ..... 40 amp alternator with internal regulator/rectifier

Capacities

Engine Crankcase with Filter ..... 4.7 liters (5.0 US qts)

Transmission ..... 31.0 liters (8.2 US gals)

Fuel Tank ..... 40.0 liters (10.6 US gals)

Cooling System ..... 6.7 liters (7.1 US qt)

Front Drive Axle (4WD only) ..... 7.5 liters (7.9 US qt)

Maximum Axle Loading

Front Axle Capacity 1540 4WD ..... 1800 kg (3968 lb)

Rear Axle Capacity 1540 4WD ..... 1800 kg (3968 lb)

Total Capacity 1540 4WD ..... 3000 kg (6614 lb)

LUBRICATION / FILL POINTS

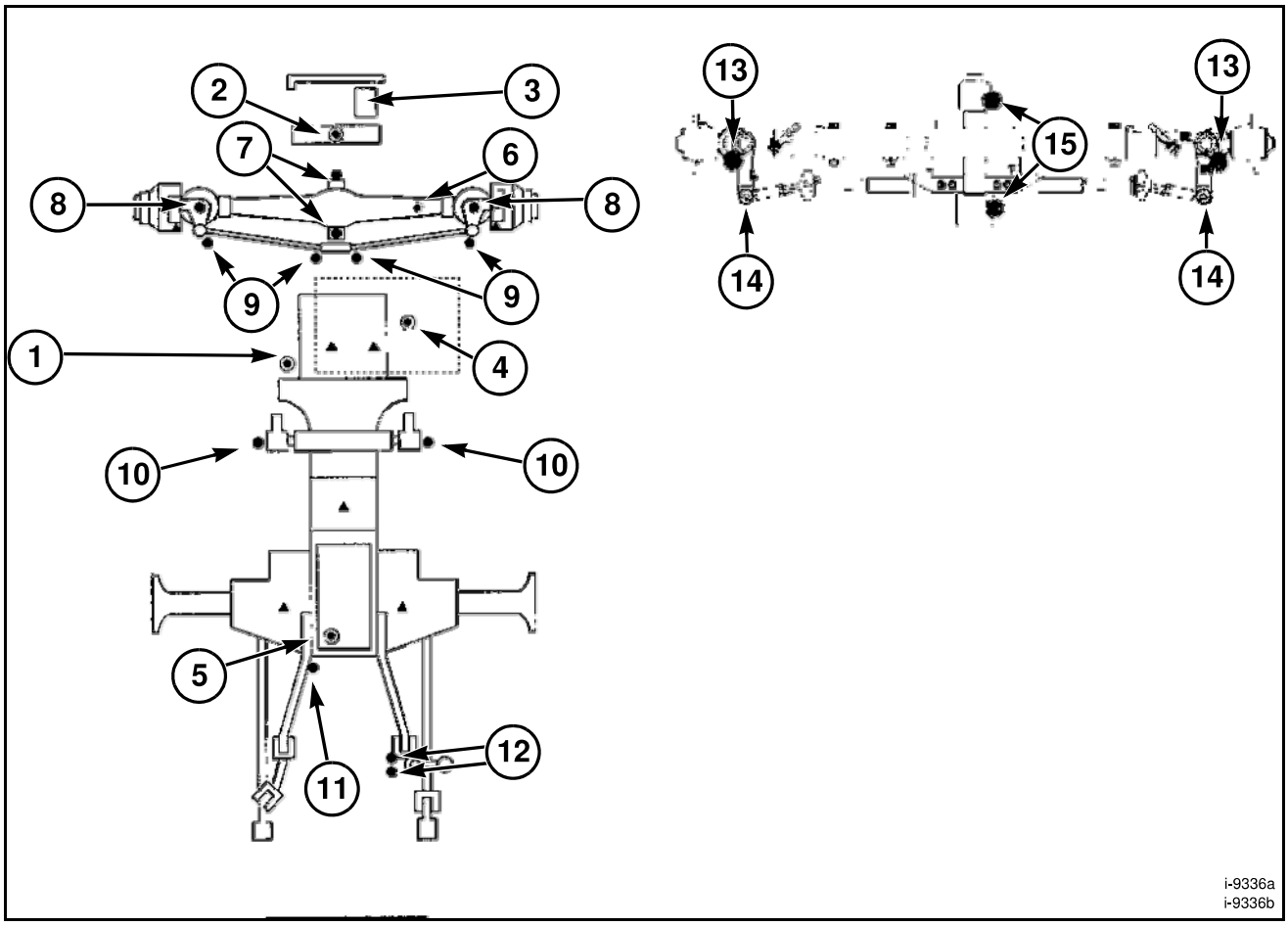

FIG. 9

FIG. 9: General layout of lubrication, fill and drain locations on Tractor:

Ref	Description	Type
1	Crankcase	Engine Oil
2	Engine Radiator	Coolant
3	Radiator Overflow Reservoir	Coolant
4	Fuel Tank	Diesel Fuel
5	Rear Housing	Hydraulic Oil
6	4WD Axle	Hydraulic Oil
7	Axle Pivots (4WD)	Grease
8	Front Spindles (4WD)	Grease
9	Tie Rod Ends (4WD)	Grease
10	Brake Pivots	Grease
11	Assist Cylinder	Grease
12	Leveling Crank	Grease
13	Front Spindles (4WD)	Grease
14	Tie Rod Ends (2WD)	Grease
15	Axle Pivots (2WD)	Grease

Thank you very much for your reading.

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