

FD Series Heads

Drive to Tree Disc Saw Heads

S/N WCFD18X005001 –

S/N WCFD21X006001 –

S/N WCFD22X007001 –

TECHNICAL MANUAL FD Series Disc Saw Heads TMF381707 (JULY01)

**CALIFORNIA
Proposition 65 Warning**

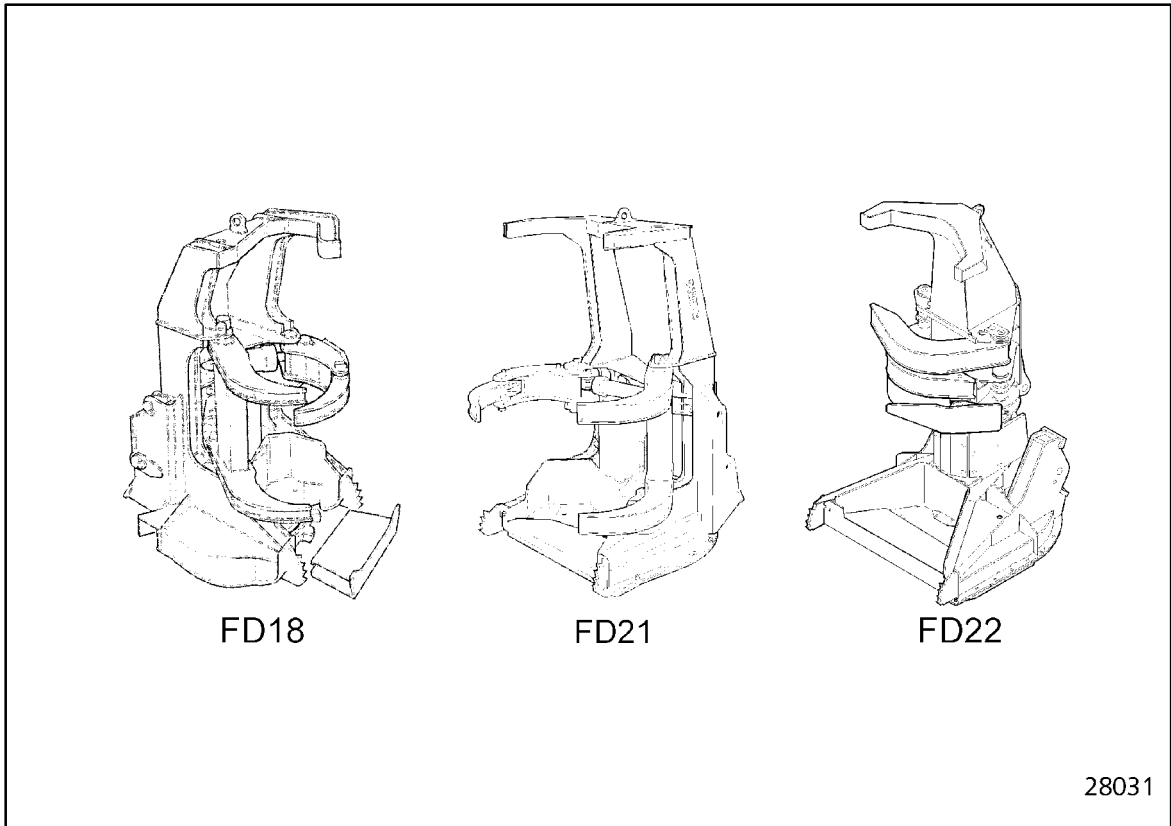
Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.



WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Service Technical Manual



Drive to Tree Disc Saw Felling Heads

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1.1 Introduction

1.1.1 General

The Workshop Manual is intended to provide technical information, component specifications, troubleshooting and removal, disassembly and reassembly procedures for most of the major components of the felling head. Use this manual in conjunction with the applicable Operator/Maintenance Manual and the applicable Carrier Workshop Manuals.

When practical, the Workshop Manual lists likely causes of malfunctions, offers test procedures to verify causes and then illustrates the steps for the adjustment or repair procedure(s).

Troubleshooting must always be a multi-step process. Use the following steps:

1. Know the operation of all machine systems.
2. Ask the operator about symptoms and when they occur.
3. Operate the machine yourself if practical.
4. List all possible causes.
5. Inspect for obvious causes.
6. Eliminate the simple ones by checking oil, changing filters, etc.
7. Carry out diagnostic procedures like pressure and leakage testing to pinpoint the cause.

Component specifications provide performance and mode of operation information that can be very useful in troubleshooting.

Disassembly and reassembly procedures are given for many major components. When possible, clearance and torques are given. If a manufacturer's workshop manual is available, it should be given priority.

Reference to special equipment for testing and repair is limited, as most repair shops or local machine shops are well equipped to fabricate on an as-needed basis to reduce downtime.

1.1.2 Models Covered By This Manual

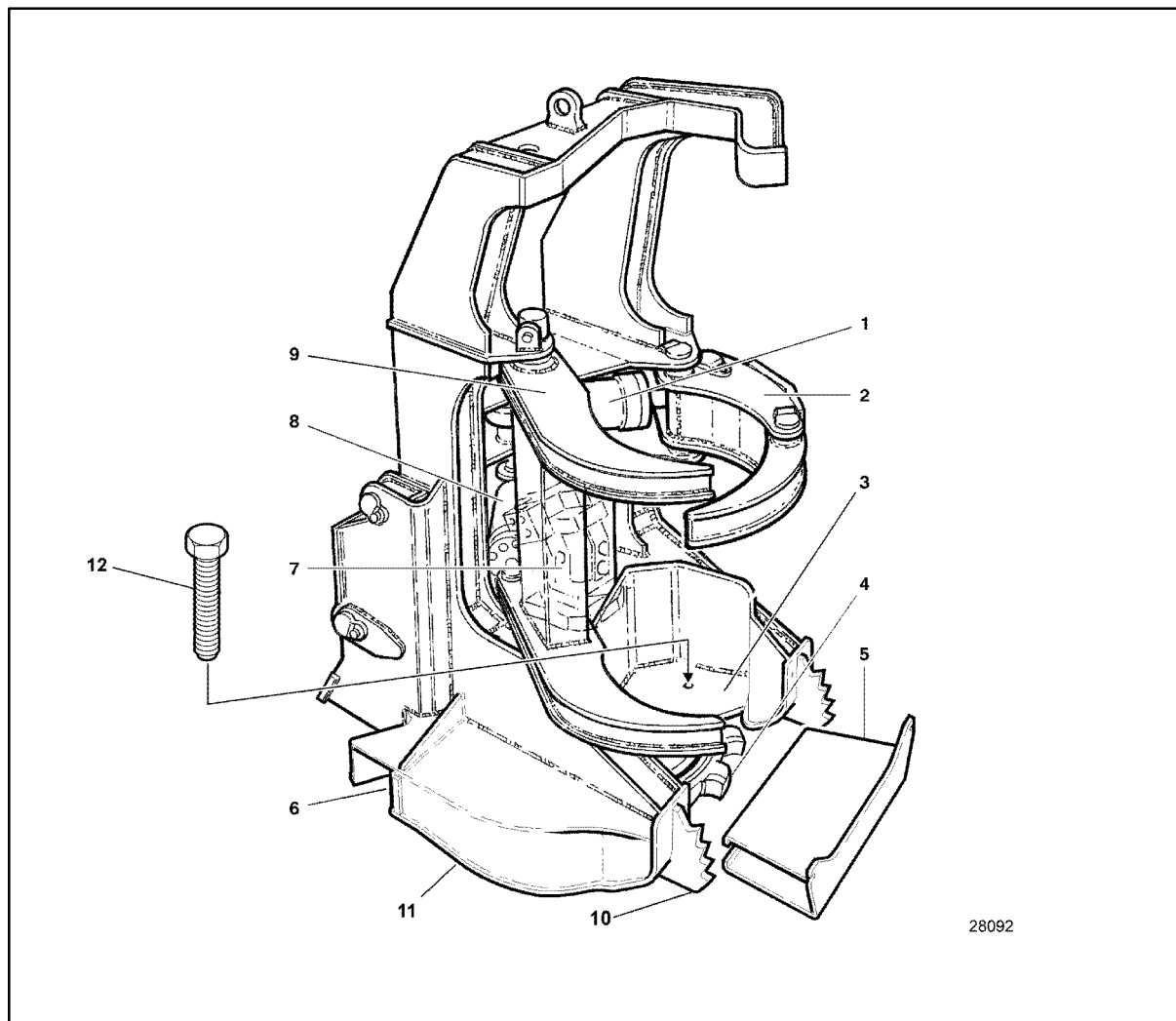
Technical information, component specifications, troubleshooting, removal, disassembly and reassembly procedures for the following model felling heads are covered in this manual:

1. FD18 (Drive to Tree)
2. FD21 (Drive to Tree)
3. FD22 (Drive to Tree)

1.2 FD18 (Drive to Tree)

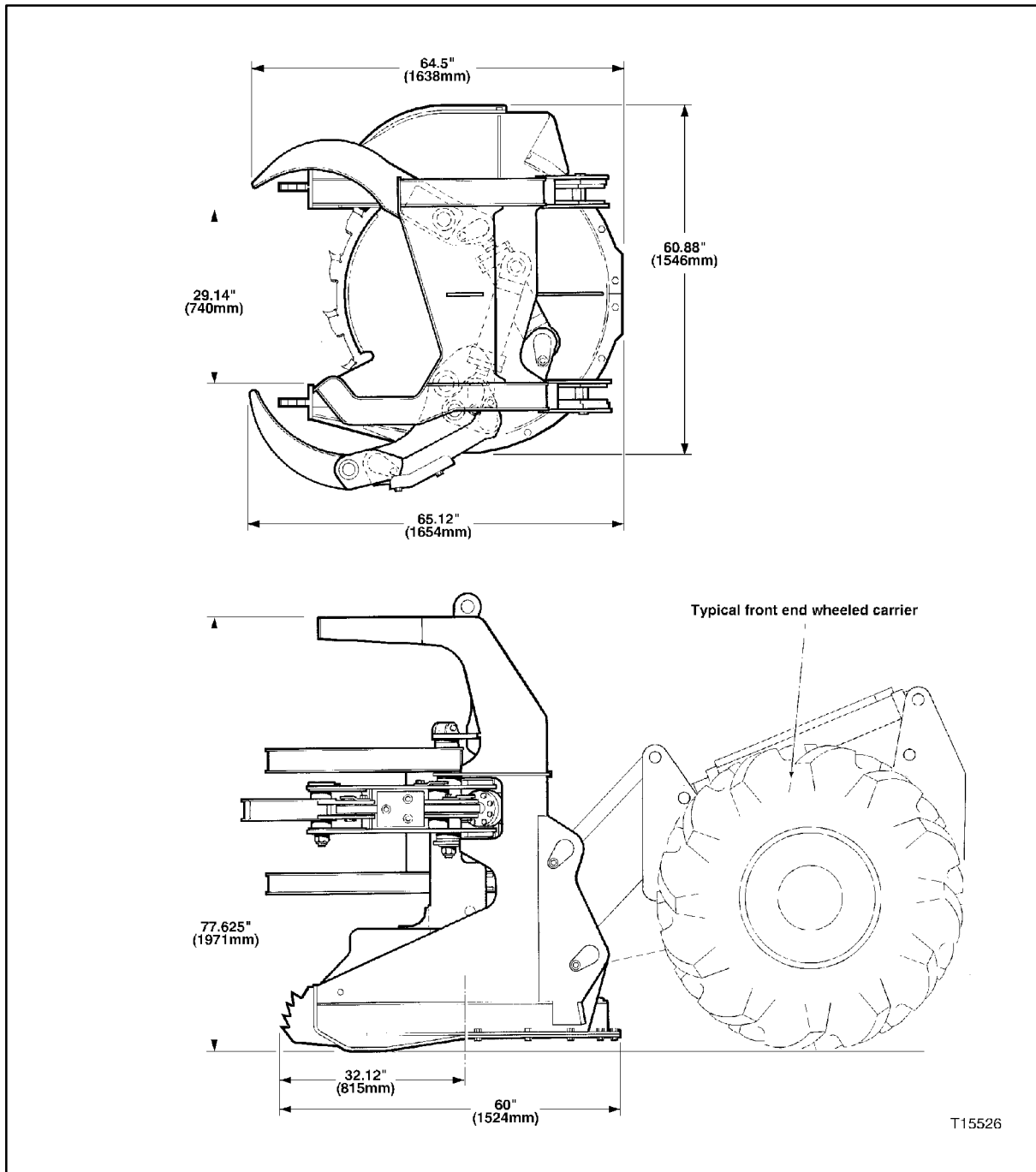
1.2.1 Component Description

1. L.H. Clamp Arm Cylinder - 7412
2. L.H. (Accumulating) Clamp Arm - 7412
3. Butt Plate - 7411
4. Disc Saw Blade - 7430
5. Disc Saw Blade Guard - 7411
6. Chip Deflector - 7411
7. Saw Drive Hydraulic Motor - 7440
8. R.H. Clamp Arms Cylinder - 7440
9. R.H. (Harvesting) Clamp Arms - 7420
10. Nose Extensions
11. Lower Guards/Skis - 7411
12. Disc Saw Blade Locking Bolt



1.2 FD18 (Drive to Tree)

1.2.2 General Dimensions



1.2 FD18 (Drive to Tree)

1.2.3 General Specifications

Bolt Torques (lb ft/lubricated)

Disc Saw Blade Lower Flange Plate	280-320 lb. ft. (380-434 Nm) (3/4"-16 UNF)
Lower Guard Plate	300-330 lb. ft. (404-447 Nm) (3/4"-10 UNC) (locknut end)
Saw Tooth	85 lb. ft. (115 Nm) (1/2"-20 UNF)
Saw Drive Motor	300-330 lb. ft. (404-447 Nm) (3/4"-10 UNC)
Saw Motor Guard	213 lb. ft. (289 Nm) (M16x2.0)
Clamp Arm Pin Retainer Nuts	300-350 lb. ft. (407-475 Nm) (1.38"-12 UNF)
Clamp Arm Pin Retainer Bolts	200-220 lb. ft. (271-298 Nm) (3/4"-10 UNC)

Clamp Cylinders

No. Cylinders	2
Bore Diameter	4.0 in. (101.6 mm)
Rod Diameter	2.0 in. (50.8 mm)
Stroke	8.5 in. (215.9 mm)
Operating Pressure	3000 psi (207 bar)

Hydraulic Requirements

Disc Saw Blade Motor	23 gpm @ 3500 psi (87 L/m @ 241 bar)
.....	18 gpm @ 4000 psi (68 L/m @ 276 bar)
Clamp Cylinders	25 gpm @ 3000 psi (95 L/m @ 207 bar)

Miscellaneous

Cutting Capacity	18" (457 mm) diameter
Weight	3680 lb. (1669 kg)

Disc Saw Blade

Series	4000B (NK - Narrow Kerf)
No. Teeth	16 rotatable
Type	Carbide Teeth/Hardened Teeth
Saw Speed	1300 +/- 25 rpm
Maximum Allowable Saw Disc Runout	0.100" (2.5 mm)
Diameter	49.5" (1257 mm)
Weight	537 lb. (244 kg)

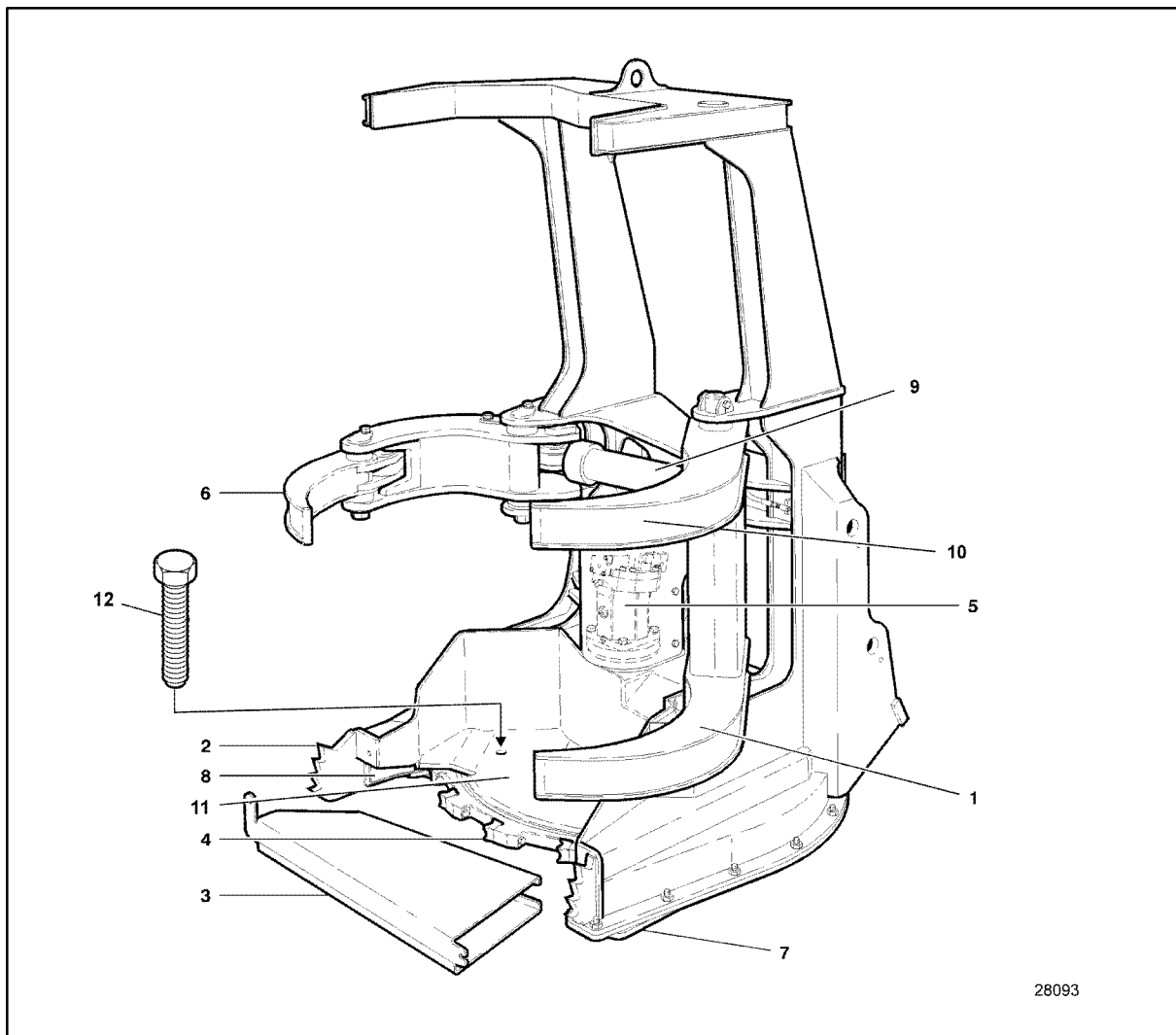
Note!

Refer to OEM carrier workshop manual for applicable Service Specifications by Model.

1.3 FD21 (Drive to Tree)

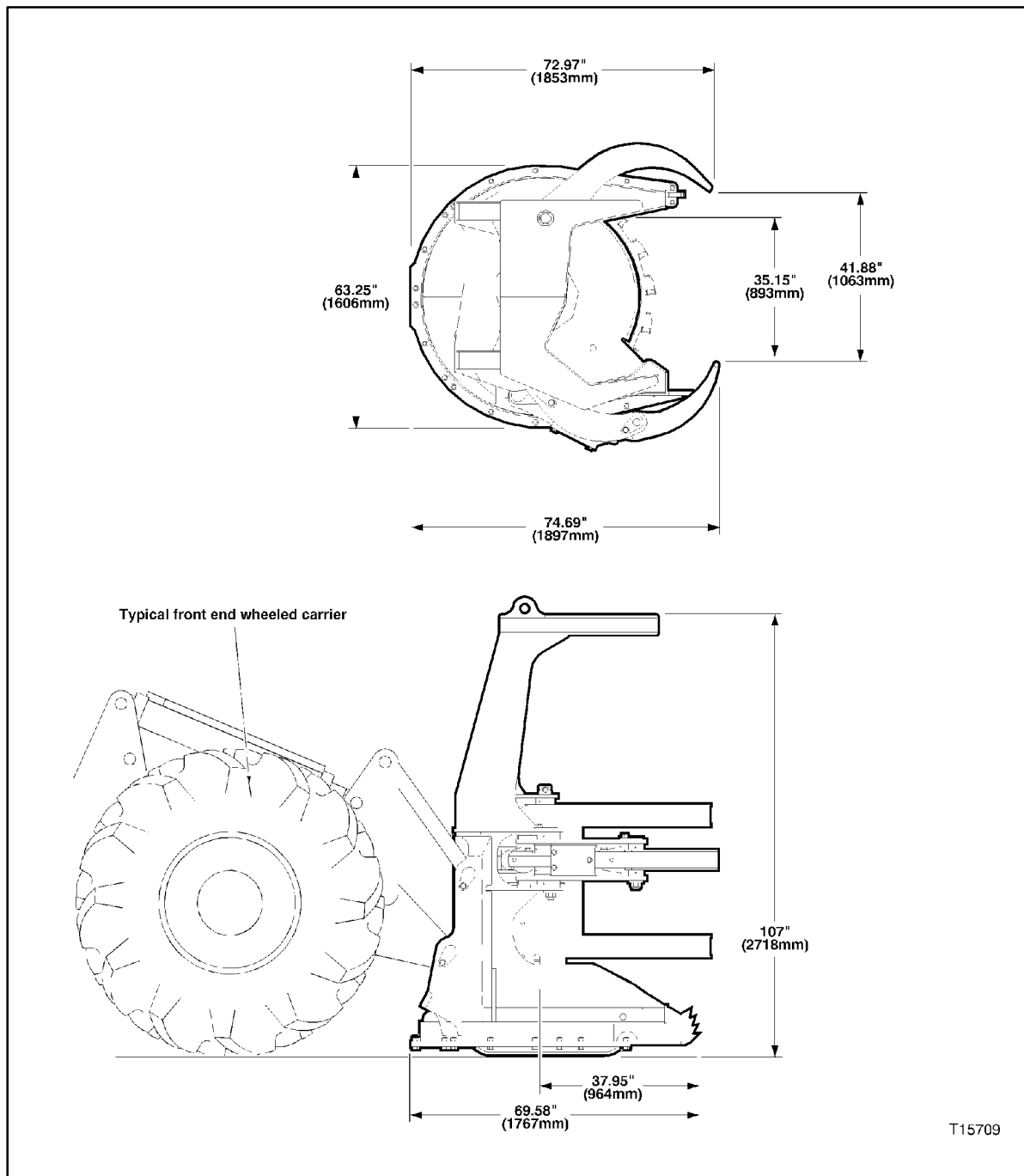
1.3.1 Component Description

- | | |
|---|---|
| 1. L.H. (Harvesting) Clamp Arms - 7412 | 7. Lower Guards/Skis - 7411 |
| 2. Nose Extensions | 8. Chip Deflector and Wear Plate - 7411 |
| 3. Disc Saw Blade Guard - 7411 | 9. Accumulating Clamp Cylinder - 7440 |
| 4. Disc Saw Blade - 7430 | 10. Harvesting Clamp Cylinder - 7440 |
| 5. Saw Drive Hydraulic Motor - 7440 | 11. Butt Plate |
| 6. R.H. (Accumulating) Clamp Arm - 7412 | 12. Disc Saw Blade Locking Bolt |



1.3 FD21 (Drive to Tree)

1.3.2 General Dimensions



1.3 FD21 (Drive to Tree)

1.3.3 General Specifications

Bolt Torques (lb ft/lubricated)

Disc Saw Blade Lower Flange Plate	280-320 lb. ft. (380-434 Nm) (3/4"-16 UNF)
Lower Guard Plate	475-525 lb. ft. (644-712 Nm)
.....	(locknut end) (7/8"-9 UNC)
Saw Tooth	85 lb. ft. (115 Nm) (1/2"-20 UNF)
.....	160 lb. ft (216 Nm) (5/8"-18 UNF)
Saw Drive Motor	300-330 lb. ft. (407-447 Nm) (3/4"-10 UNC)
Saw Motor Guard	213 lb ft (289 Nm) (M16 x 2.0)
Clamp Arm Pin Retainers	200-220 lb. ft. (271-298 Nm) (3/4"-10 UNC)
.....	300-350 lb. ft. (407-475 Nm) (1.38"-12 UNC)
.....	175-190 lb. ft. (237-258 Nm) (5/8"-11 UNC)

Clamp Cylinders

No. Cylinders	2
Bore Diameter	3.5 in. (88.9 mm)
Rod Diameter	2.0 in. (50.8 mm)
Stroke	12.38 in. (314.5 mm)
Operating Pressure	3000 psi (207 bar)

Hydraulic Requirements

Disc Saw Blade Motor	30 gpm @ 3500 psi (114 L/m @ 241 bar)
.....	25 gpm @ 4000 psi (95 L/m @ 276 bar)
Clamp Cylinders	30 gpm @ 3200 psi (114 L/m @ 221 bar)

Miscellaneous

Cutting Capacity	22" (559 mm) diameter
Weight	5600 lb. (2540 kg)

Disc Saw Blade

Series	4000B (NK - Narrow Kerf or WK - Wide Kerf)
No. Teeth	18 rotatable
Type	Carbide Teeth/Hardened Teeth
Saw Speed	1175 +/- 25 rpm
Maximum Allowable Saw Disc Runout	0.100" (2.5 mm)
Diameter	56.0" (1422 mm)
Weight	735 lb. (334 kg)

Note!

Refer to OEM carrier workshop manual for applicable Service Specifications by Model.

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