

# **CHAMPION MOTOR GRADERS**

---

A Company within the Volvo Construction Equipment Group

## **700 Series**

**Serial Numbers  
16245 to 21910**

**U.S. Serial Numbers  
2021-2 to 2658-2**



# **Parts Manual**



---

## 700 Series

# PARTS MANUAL

---

### Introduction

This manual applies to Models 710 thru 780A, including graders equipped with All Wheel Drive. Use it to order the correct replacement parts for your Champion 700 Series motor grader. It applies to graders with Canadian serial numbers **16224, 16245 to 21910**, and U.S. serial numbers **2021-2 to 2658-2**.

Make sure you give your Champion Dealer the complete serial number of your grader, together with the part number, description and quantity of the part you need. Refer to **How to Use this Manual** on the following page.

The information in this manual is current at the time of publication. Ongoing product improvements may, however, cause some part numbers to change. Always verify part numbers with your Champion Dealer before ordering parts.

Some part assemblies are delivered disassembled to assist in shipping and installation.

Champion Road Machinery Limited reserves the right to amend any specification without notice.

Use only Champion Road Machinery approved parts.

In case of difficulty in obtaining Parts or Service for your motor grader, please contact Champion Road Machinery, Goderich, Ontario, Canada.

Telephone: 519-524-2601  
Telefax: 519-524-3021 or 519-524-3017  
Telex: 069-55175 CHAMPARTS GDCH



PRINTED ON RECYCLED PAPER



# HOW TO USE THIS MANUAL

Start by turning to the Table of Contents. As the Table shows, the manual is divided into numbered Sections, each of which covers a separate area of the motor grader. Find the Section title that describes the general area you are interested in; for example: "Section 1-Steering System". Make a note of the Section Number.

Under each Section Title you will find descriptions of the related component-groups and the pages on which they appear, such as "Page 9/10 Steering Unit and Column". Find the component-group most likely to contain the parts you need for your model. Make a note of its page numbers.

The two page numbers that appear for each component-group represent a parts leaf or "plate". The odd numbered page shows the parts illustration, and the even numbered page (overleaf) shows the list of part numbers, descriptions and quantities.

If you know the description of the part you need, you can also refer to the Parts Manual Alphabetical Index at the front of the manual to find the pages on which it appears.

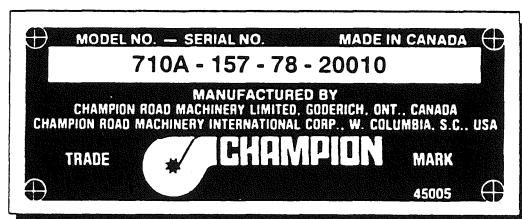
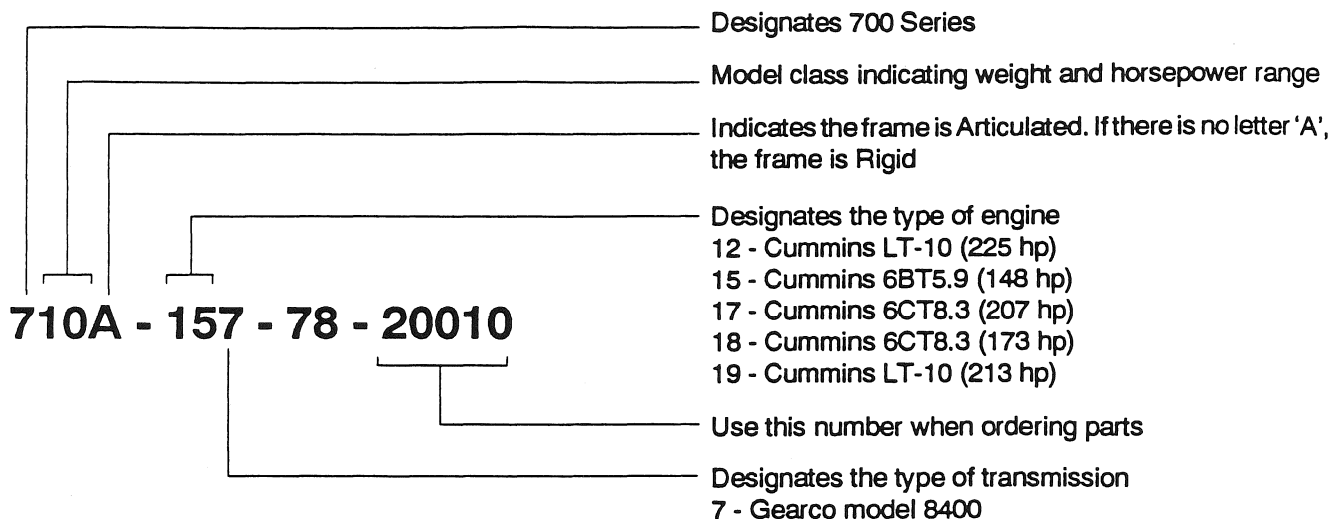
Each odd numbered page has a box in the lower right corner showing section and page numbers. To find the correct parts plate, search through the manual until you find illustration pages with the same section number as the one you recorded. Now find the page with the proper odd page number.

Product improvements often cause the parts used on a particular model of grader to change. The new parts will usually be described on a new parts plate. The new plate will have the same section and page number as the old parts plate and will appear alongside of it in the manual; however, it will have a different issue number. The issue number appears inside the parts illustration, directly above the page number, in the bottom right hand corner. An asterisk (\*) beside a part number indicates a new, different or corrected part number. Find the parts plate identified as ISSUE No. 1.

Compare the serial number of your grader with the "Effective Serial Numbers" listed on the lower left corner of the illustration page. If your grader's serial number appears within this range, you should use this issue of the parts plate. If your grader's serial number is above the range, refer to the following issue and check the serial number range. Repeat this procedure until you find the correct issue. If your serial number appears below the range listed on ISSUE No. 1, you should not use this manual. See your Champion Dealer for the correct parts manual.

Find the part(s) you need in the illustration. Each part is identified with an "item number". Make a note of the number and turn the page to the part number listing. Find the number in the item number column. Opposite this number you will find the Champion part number, the description of the part and the quantity used in this component-group. A final column, "Remarks" may contain additional helpful information.

**About Serial Numbers** - The serial number for your 700 Series grader is located on the right hand side of the frame directly ahead of the cab.



#### Abbreviations -

A.R. .... As required	c/w ..... Complete with	No. .... Number
As Req'd. .... As required	Ga. .... Gauge	P.S.I. .... Pounds per square inch
ASSY. .... Assembly	L.H. .... Left hand	REF. .... Reference
A.W.D. .... All wheel drive	R.H. .... Right hand	S/N .... Serial number
CYL. .... Cylinder	mm ..... Millimeters	Thru ..... Through

**Repair Part** - indicates the part is not normally a serviceable item. It is often welded to the grader frame or to large assemblies.

When ordering parts, always give your Champion Distributor the part number, description and quantity you require, as well as the complete serial number of your grader.

**37° J.I.C. Flare and Standard SAE O Rings** - Order replacement 37° J.I.C. flare O rings as follows:

37° Hydraulic Fitting Size	O Ring Part Number
1/4 in.	42229
5/16 in.	42230
3/8 in.	42231
1/2 in.	42232
5/8 in.	42233
3/4 in.	12A-016
1 in.	12A-020
1-1/4 in.	12A-024
1-1/2 in.	12A-028
2 in.	12A-032

Order standard SAE O rings by part number **116A-** followed by the last two digits of the fitting part number.

**Examples:** 118A-0810 fitting requires 116A-10 O ring      111H-08 fitting requires 116A-08 O ring

# QUICK REFERENCE CHART – FILTERS & BELTS

## S/N 16245 & UP

NOTE: N/A MEANS NOT APPLICABLE

MODEL NO.		710 (A)	720 (A)	730 (A)	740 (A)	750 (A)	780 (A)
CUMMINS ENGINE TYPE		6BT5.9	6CT8.3	6CT8.3	LT10-C	LT10-C	LT10-C
ITEM	S/N RANGE	P/N	P/N	P/N	P/N	P/N	P/N
HYDRAULIC FILTER	20121 & UP	53527	53527	53527	53527	53527	53527
	16245 TO 20120	13028	13028	13028	13028	13028	13028
TRANSMISSION FILTER TRANS'N FILTER-STANDARD TRANS'N FILTER-TROPICAL	19340 & UP	49076	49076	49076	49076	49076	49076
	16245 TO 19339	37104	37104	37104	37104	37104	37104
	16245 TO 19339	45543	45543	45543	45543	45543	45543
HYDRAULIC FILTER- ALL WHEEL DRIVE SYSTEM	16860 & UP	44419	44419	44419	N/A	N/A	N/A
	16245 TO 16859	30790	30790	30790	N/A	N/A	N/A
AIR FILTER ELEMENT- PRIMARY	16806 & UP	28120	28120	28120	37398	37398	37398
	16245 TO 16805	28120	28120	28120	28120	28120	28120
AIR FILTER ELEMENT- SAFETY	16806 & UP	28121	28121	28121	37399	37399	37399
	16245 TO 16805	28121	28121	28121	28121	28121	28121
ENGINE OIL FILTER	21457 & UP	36844	54429	54429	54429	54429	54429
	19885 TO 21456	36844	36847	36847	54429	54429	54429
	16245 TO 19884	36844	36847	36847	24355	24355	24355
FUEL FILTER *	19885 & UP	36845	36845	36845	N/A	N/A	N/A
	16806 TO 19884	36845	36845	36845	24351	24351	24351
	16245 TO 16805	36845	24351	24351	24351	24351	24351
FUEL FILTER-BYPASS	16245 TO 19884	N/A	N/A	N/A	27872	27872	27872
FUEL FILTER WITH DRAIN (WATER SEPARATOR)	19885 & UP	36846	36846	36846	36849	36849	36849
	16245 TO 19884	36846	36846	36846	N/A	N/A	N/A
FUEL FILTER IN-LINE	20265 & UP	59115	59115	59115	N/A	N/A	N/A
FUEL FILTER-RACOR OPTION	16245 & UP	36107	36107	36107	36107	36107	36107
COOLANT FILTER	16245 & UP	45674	45674	45674	45674	45674	45674
COOLANT FILTER-PRECHARGE	16245 & UP	34654	34654	34654	34654	34654	34654
FAN / ALTERNATOR BELT	16805 & UP	37114	37395	37395	N/A	N/A	N/A
	16245 TO 16804	37114	N/A	N/A	N/A	N/A	N/A
FAN BELT	16805 & UP	N/A	N/A	N/A	37109	37109	37109
	16245 TO 16804	N/A	37111	37111	37109	37109	37109
ALTERNATOR BELT	16805 & UP	N/A	N/A	N/A	37110	37110	37110
	16245 TO 16804	N/A	37112	37157	37110	37110	37110
CLUTCH PUMP V-BELT	19586 TO 19884	N/A	51447	51447	51447	51447	51447
	19885 TO 20807	N/A	53599	53599	53598	53598	53598

O-RING KIT P/N 63049 contains more than 200 various size O-rings for hydraulic hose fittings on SERIES II and all SERIES III graders.

O-RING KIT P/N 12A-9002 is a general purpose kit containing a wide assortment of more than 500 of the most popular O-rings used for maintenance and repair on SERIES I, II and III graders.

\* SEVERAL DIFFERENT FUEL FILTERS MAY BE REQUIRED DEPENDING ON MODEL & SERIAL NUMBER

# TABLE OF CONTENTS

05/91

## QUICK REFERENCE CHART FOR FILTERS AND BELTS - SEE PAGE 4.

### SECTION 1: STEERING SYSTEM

Page 1/2	.....	Front Axle - Models 710 thru 750A also 760
Page 3/4	.....	Front Axle - All Wheel Drive
Page 5/6	.....	Planetary Reduction Unit - All Wheel Drive
Page 7/8	.....	Wheel Motor Assembly - All Wheel Drive
Page 9/10	.....	Steering Unit & Column
Page 11/12	.....	Steering Cylinder & Circuit - Models 710 thru 780A to S/N 20804 & 20807
Page 11/12	.....	Steering Cylinder & Circuit and Booster Circuits - S/N 20805 & up
Page 13/14	.....	Steering Cylinder & Circuit - Models 740 thru 780A to S/N 17932
Page 15/16	.....	Steering Cylinder & Circuit - All Wheel Drive
Page 15/16	.....	Steering Cylinder & Circuit and Booster Circuits - All Wheel Drive - S/N 20811 & up
Page 17/18	.....	Leaning Wheel Cylinder & Circuit
Page 19/20	.....	Leaning Wheel Cylinder & Circuit - All Wheel Drive
Page 21/22	.....	Articulation Joint & Indicator
Page 23/24	.....	Supplemental Steering System
Page 25/26	.....	Front Axle Assembly - Models 780/780A

### SECTION 2: CIRCLE, DRAWBAR & MOLDBOARD

Page 1/2	.....	Circle & Drawbar Assembly - Models 710/710A to S/N 19528
Page 3/4	.....	Circle & Drawbar Assembly - Models 710 thru 750A
Page 5/6	.....	Circle & Drawbar Assembly - Models 740 thru 780A
Page 7/8	.....	Circle Turn Cylinder & Circuit
Page 9/10	.....	Circle Turn Valve Assembly
Page 11/12	.....	Circle Shift Cylinder & Circuit
Page 13/14	.....	Slide Shift Cylinder & Circuit - Models 710/710A to S/N 19233
Page 15/16	.....	Slide Shift Cylinder & Circuit
Page 17/18	.....	Manual & Power Tilt Moldboard Installations - Models 710 thru 740A also 760
Page 19/20	.....	Moldboards, Edges & Extensions
Page 21/22	.....	Power Tilt Moldboard - Models 740 thru 780A
Page 23/24	.....	Power Tilt Cylinder & Circuit - Models 710/710A
Page 25/26	.....	Power Tilt Cylinder & Circuit - Models 720 thru 740A also 760
Page 27/28	.....	Power Tilt Cylinder & Circuit - Models 750 thru 780A

### **SECTION 3:     BLADE LIFT**

Page 1/2 .....	Blade Lift Assembly - Fixed Point System
Page 3/4 .....	Blade Lift Circuit - Fixed Point System
Page 5/6 .....	Blade Lift Cylinders & Moveable Point Lock Cylinder
Page 7/8 .....	Blade Lift Assembly - Moveable Point System
Page 9/10 .....	Blade Lift Circuit - Moveable Point System

### **SECTION 4:     HYDRAULICS**

Page 1/2 .....	Hydraulic Pumps to S/N 20804 & 20807
Page 1/2 .....	Hydraulic Pump - Main - S/N 20805 & up
Page 3/4 .....	Hydraulic Pump Assembly - All Wheel Drive
Page 5/6 .....	Pump Driveshaft Installation
Page 7/8 .....	Manifold Valve Assembly
Page 9/10 .....	Manifold Valve Controls
Page 11/12 .....	Primary Hydraulic Circuit - Model 710 to S/N 16744 & U.S. S/N 2419-2
Page 13/14 .....	Primary Hydraulic Circuit - Model 710A to S/N 20803
Page 15/16 .....	Primary Hydraulic Circuit - Models 710 thru 740 also 760 to S/N 20804
Page 15/16 .....	Main Hydraulic Circuit - Models 710 thru 780 - S/N 20825 & up
Page 17/18 .....	Primary Hydraulic Circuit - Models 720A thru 740A to S/N 20807
Page 17/18 .....	Main Hydraulic Circuit - Models 710A thru 780A S/N 20805 & up
Page 19/20 .....	Primary Hydraulic Circuit - Oil Disc Brakes - Models 710 thru 780 to S/N 20760
Page 21/22 .....	Primary Hydraulic Circuit - Oil Disc Brakes - Models 710A thru 780A to S/N 20800
Page 23/24 .....	Pump Gearbox Assembly - to S/N 16815
Page 25/26 .....	Pump Gearbox Assembly - All Wheel Drive
Page 27/28 .....	Motor Control Valve - All Wheel Drive
Page 29/30 .....	Selector Valve Assembly - All Wheel Drive
Page 31/32 .....	Primary Hydraulic Circuit - All Wheel Drive to S/N 20791
Page 33/34 .....	Hydraulic Circuit & Tank Installation - All Wheel Drive
Page 35/36 .....	Hydraulic Circuit - Forward Section - All Wheel Drive
Page 37/38 .....	Solenoid Valve - Articulation & Attachments
Page 39/40 .....	Solenoid Valve - Articulation & Attachments - 24 Volt
Page 41/42 .....	Hydraulic Pump - Transmission/Steering - S/N 20805 & up
Page 43/44 .....	Articulation Cylinders S/N 20805 & up
Page 45/46 .....	Hydraulic Oil Tank & Relief Valves - S/N 20805 & up

### **SECTION 5:     CLUTCH**

Page 1/2 .....	Clutch Assembly - Models 710 thru 780A
Page 3/4 .....	Clutch Assembly - Models 740 thru 780A to S/N 19649
Page 5/6 .....	Clutch Pedal, Slave Cylinder & Circuit
Page 7/8 .....	Clutch Master Cylinder & Booster Assembly
Page 9/10 .....	Clutch Pump - Models 720 thru 780A - S/N 19586 to 20804 & 20807

## **SECTION 6: TRANSMISSION - MODEL 8400**

Page 1/2	.....	Transmission Controls Assembly
Page 3/4	.....	Transmission Assembly - Model 8400
Page 5/6	.....	Transmission Hydraulic Circuit
Page 7/8	.....	Control Valves
Page 9/10	.....	Input Clutch & Shaft Assembly
Page 11/12	.....	Reverse Clutch & Shaft Assembly
Page 13/14	.....	Output Clutch & Shaft Assembly
Page 15/16	.....	Intermediate Clutch & Shaft Assembly
Page 17/18	.....	Oil Cooler Installation - Optional
Page 19/20	.....	Transmission Controls Assembly - 24 Volt
Page 21/22	.....	Transmission Control Valves - 24 Volt

## **SECTION 7: DRIVE TRAIN**

Page 1/2	.....	Driveshaft - Upper
Page 3/4	.....	Driveshaft - Lower
Page 5/6	.....	Wheels, Rims & Tires
Page 7/8	.....	Final Drive Assembly - Single Reduction - Models 710 thru 720A
Page 9/10	.....	Final Drive Assembly - Models 730 & 730A also 720 thru 780 Double Reduction (see issues for serial number applications)
Page 11/12	.....	Final Drive Assembly - Double Reduction c/w Differential - Models 720 thru 780A
Page 13/14	.....	Tandem Assembly - Drum Brakes - Models 710 thru 740A also 760
Page 15/16	.....	Tandem Assembly - Oil Disc Brakes - Models 710 thru 780A
Page 17/18	.....	Differential Hydraulic Circuit
Page 19/20	.....	Long Tandem Assembly - Models 740 thru 760 to S/N 17721

## **SECTION 8: POWER PLANT**

Page 1/2	.....	Engine Mounts, Hood & Panels
Page 3/4	.....	Fuel Circuit & Fuel Tank
Page 5/6	.....	Throttle Controls
Page 7/8	.....	Air Intake Installation
Page 9/10	.....	Exhaust Installation
Page 11/12	.....	Radiator Installation - Models 710 thru 730A (see issue 3C for serial number application)
Page 11/12	.....	Radiator Installation - All Models (see issue 4 for serial number application)
Page 13/14	.....	Radiator Shutter
Page 15/16	.....	Cold Start & Block Heater Installation
Page 17/18	.....	Radiator Installation - Models 740 thru 780A to S/N 20373



## **SECTION 9: BRAKES**

Page 1/2 .....	Handbrake Installation - All Models to S/N 21052
Page 1/2 .....	Handbrake Installation - Models 710 thru 740A - S/N 21053 & Up
Page 3/4 .....	Master Cylinder & Booster Assembly - Power Brakes to approx. S/N 19616
Page 5/6 .....	Master Cylinder & Booster Assembly -Dual Brakes & Drum Brakes
Page 7/8 .....	Brake Pedal & Circuit Installation - Power Brakes to approx. S/N 19616
Page 9/10 .....	Brake Pedal & Circuit Installation - Dual Brakes & Drum Brakes
Page 11/12 .....	Wheel Brake & Cylinder Assembly
Page 13/14 .....	Oil Disc Brake Assembly
Page 15/16 .....	Mechanical Linkage - Oil Disc Brakes to S/N 21294
Page 17/18 .....	Operating Circuit - Oil Disc Brakes to S/N 21294
Page 17/18 .....	Brake Pedal & Circuit - Oil Disc Brakes - S/N 21134 & Up
Page 19/20 .....	Handbrake Installation - Models 750 thru 780A - S/N 21053 & Up

## **SECTION 10: ELECTRICAL SYSTEM**

Page 1/2 .....	Instruments
Page 3/4 .....	Lighting Installations
Page 5/6 .....	Wiring Harnesses & Sending Units
Page 7/8 .....	Battery Installation
Page 9/10 .....	Starters, Alternators, Belts, Fans and Adapters
Page 11/12 .....	Control Box, Wiring Harnesses & Sending Units - All Wheel Drive
Page 13/14 .....	Electric Tire Pump
Page 15/16 .....	Instruments - 24 Volt
Page 17/18 .....	Not Applicable
Page 19/20 .....	Lighting Installations - 24 Volt
Page 21/22 .....	Wiring Harnesses, Sending Units & Horn - 24 Volt

## **SECTION 11: CAB & CHASSIS**

Page 1/2 .....	Complete Cab - R.O.P.S.
Page 3/4 .....	Lower/Half Cab
Page 5/6 .....	Upper Cab
Page 7/8 .....	Sound Suppression, Interior Trim & Manuals Box
Page 9/10 .....	Seat Installation
Page 11/12 .....	Cab Pressurizer Installation
Page 13/14 .....	Cab Heater & Plumbing
Page 15/16 .....	Windshield Wiper/Washer & Defroster Fan
Page 17/18 .....	Air Conditioner Installations
Page 19/20 .....	Chassis Removable Items & Anti-Vandalism Equipment

Page 21/22	.....	Decals
Page 23/24	.....	Air Conditioner & Air Vent Assembly
Page 25/26	.....	Safety Signs
Page 27/28	.....	Doors & Mirrors - S/N 21003 & Up

## **SECTION 12: ATTACHMENTS**

Page 1/2	.....	V-Plow & A-Frame-Chain Lift
Page 3/4	.....	V-Plow & A-Frame-Down Pressure
Page 5/6	.....	Bulldozer & A-Frame
Page 7/8	.....	One Way Plow & A-Frame
Page 9/10	.....	Plow & Dozer Cylinder & Circuit
Page 11/12	.....	Scarifier Assembly
Page 13/14	.....	Scarifier Cylinder, Selector Valve & Circuit
Page 15/16	.....	Rear Mount Wing Installation - All models excluding 780A
Page 17/18	.....	Front Mount Wing Installation
Page 19/20	.....	Front Mount Wing Hydraulics
Page 21/22	.....	Rear Mount Wing Hydraulics
Page 23/24	.....	Wing Cylinders
Page 25/26	.....	Rear Mount Ripper Installation
Page 27/28	.....	Ripper Cylinder & Circuit
Page 29/30	.....	Windrow Eliminator Installation
Page 31/32	.....	Windrow Eliminator Cylinder & Circuit
Page 33/34	.....	Left Hand Rear Mount Wing Installation
Page 35/36	.....	Left Hand Rear Mount Wing Hydraulic Circuit & Cylinders
Page 37/38	.....	Rear Mount Wing Installation - Model 780A