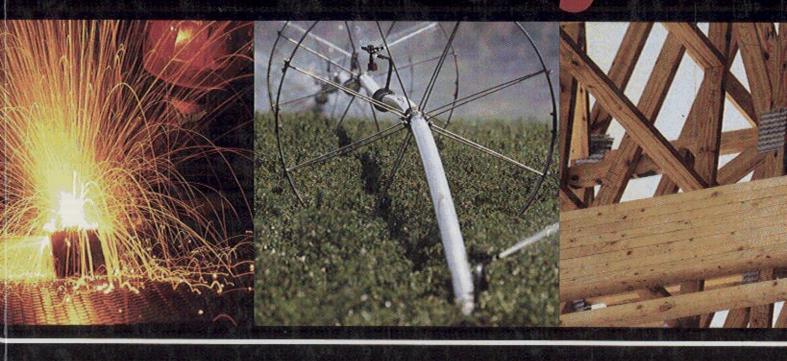
THOMSON DELMAR LEARNING

(GREULEUR)

FUNDAMENTALS & APPLICATIONS

TH EDITION



RAY V. HERREN

CONTENTS

	Preface Acknowledgments	ix xii
Section 1	Exploring Careers in Agricultural Mechanics	
Unit 1 Unit 2	Mechanics in the World of Agriculture Career Options in Agricultural Mechanics	3 12
Section 2	Using The Agricultural Mechanics Shop)
Unit 3 Unit 4 Unit 5 Unit 6	Shop Orientation and Procedures Personal Safety in Agricultural Mechanics Reducing Hazards in Agricultural Mechanics Shop Cleanup and Organization	27 37 47 55
Section 3	Hand Woodworking and Metalworking	
Unit 7 Unit 8 Unit 9 Unit 10 Unit 11 Unit 12 Unit 13	Hand Tools, Fasteners, and Hardware Layout Tools and Procedures Selecting, Cutting, and Shaping Wood Fastening Wood Finishing Wood Identifying, Marking, Cutting, and Bending Metal Fastening Metal	67 89 106 122 134 144 159
Section 4	Power Tools in the Agricultural Mechanics Shop	
Unit 14 Unit 15 Unit 16	Portable Power Tools Woodworking with Power Machines Metalworking with Power Machines	179 197 216
Section 5	Project Planning	
Unit 17 Unit 18 Unit 19	Sketching and Drawing Projects Figuring a Bill of Materials Selecting, Planning, and Building a Project	229 245 254
Section 6	Tool Fitting	
Unit 20 Unit 21	Repairing and Reconditioning Tools Sharpening Tools	269 280

Section 7	Gas Heating, Cutting, Brazing, and W	lelding
Unit 22 Unit 23 Unit 24	Using Gas Welding Equipment Cutting with Oxyfuels and Other Gases Brazing and Welding with Oxyacetylene	293 302 313
Section 8	Arc Welding	
Unit 25 Unit 26	Selecting and Using Arc Welding Equipment Arc Welding Mild Steel and GMAW/GTAW Welding	331 341
Section 9	Painting	
Unit 27 Unit 28	Preparing Wood and Metal for Painting Selecting and Applying Painting Materials	369 380
Section 10	Power Mechanics	
Unit 29 Unit 30 Unit 31	Fundamentals of Small Engines Small Engine Maintenance and Repair Diesel Engines and Tractor Maintenance	397 409 431
Section 11	Electricity and Electronics	
Unit 32 Unit 33 Unit 34 Unit 35	Electrical Principles and Wiring Materials Installing Branch Circuits Electronics in Agriculture Electric Motors, Drives, and Controls	443 457 467 483
Section 12	Plumbing, Hydraulic, and Pneumatic Sy	stems
Unit 36 Unit 37 Unit 38	Plumbing Irrigation Technology Hydraulic, Pneumatic, and Robotic Power	505 524 538
Section 13	Concrete and Masonry	
Unit 39	Concrete and Masonry	555
Section 14	Agricultural Structures	
Unit 40 Unit 41 Unit 42	Planning and Constructing Agricultural Structures Aquaculture, Greenhouse, and Hydroponics Structures Fence Design and Construction	575 598 611
	Appendix A Projects Appendix B Data Tables Glossary Index	623 725 743 789