

SERIES 02 - EQUIPMENT MAINTENANCE/OPERATION

18 Modules Series price: US\$ 5,400. Single tapes: US\$ 300.

Safe, efficient equipment operations is the objective. This series will permit equipment operators to learn more quickly the correct daily maintenance and operating procedures for motorgraders, front end loaders, crawler tractors, rollers, asphalt distributors, dump trucks, and light vehicles. Proper daily maintenance will keep machines in good working condition and help to extend their service life. Correct operating procedures will enable the equipment operators to perform road construction and maintenance activities efficiently. These two results will extend the value of available funds.

Module 1 - 20 Minutes

Operator Daily Maintenance of Motorgraders

This Module shows the operator the proper daily maintenance procedures which consist of four groups of activities: the pre-start check, the warm-up check, the daily operating check, and the shutdown check. More importantly, it will tell why these procedures are necessary and how to perform them correctly.

Module 2 - 22 Minutes

Motorgrader Operation, Part 1

Included here are the equipment instruments and controls; preoperation checks; general operation tips; how to start the engine; basic maneuvers including moving forward, and backward, turning, braking and stopping; safety practices; and six basic steps of operation for any job. The 6 basic steps are: Study the Job Area, Position the Motorgrader, Set the Blade for the Work to be Done, Setting the Gear, Driving Straight Ahead and Make Few Blade Changes as Possible.

Module 3 - 21 Minutes

Motorgrader Operation, Part 2

Operating procedures for five motorgrader activities are presented: grading a surface, mixing and windowing, spreading, finish grading, including both coarse and fine finishing, ditch cutting, backslope preparation, and ditch cleaning. Each activity is demonstrated in detail by the model operator.

Module 4 - 21 Minutes

Articulated Motorgrader Operation

The special controls, and operating procedures for the articulated motorgrader are treated here. Procedures for V-ditch cleaning, both wet and dry ditches, for ditch cutting, and for high banksloping are demonstrated step-by-step. Effective uses of the articulated motorgrader in difficult job conditions are also shown in detail.

Module 5 - 18 Minutes

Operator Daily Maintenance of Front-End Loaders

Following these daily preventative maintenance procedures will provide efficient performance over a longer period, and extend the service life of the front-end loader. The tape demonstrates in detail how to carry out correctly four groups of daily maintenance activities on the front-end loader and why these activities are necessary. It also covers procedures for cleaning a dirty air filter element if no new elements are available for replacement.

Module 6 - 19 Minutes

Front-End Loader Operation, Part 1

Instruments and controls are shown and described. Basic uses of the front)end loader, safety procedures, general operating tips, preoperation checks, how to start the engine, basic maneuvers including driving forward and backward, braking and stopping, and how to shut down the engine are all treated in detail.

Module 7 - 19 Minutes

Front-End Loader Operation, Part 2

More advance tasks are demonstrated step-by-step. Operating procedures for efficient loading, stockpiling, digging, rough grading, hauling, demolition, and forklifting are included. Two methods of loading material from a stockpile into a truck, the I-shape method and the Y-shape method, are shown. Standard stockpiling, ramp stockpiling and bin stockpiling procedures are described in detail.

Module 8 - 19 Minutes

Operator Daily Maintenance of Crawler Tractors

The operator is shown the general and proper procedures for operator daily maintenance on crawler tractors, and is given an explanation why these procedures are necessary. All necessary daily preventive maintenance activities from the start to the end of an operating day are clearly performed by the model operator. Following these procedures will help to ensure that the crawler tractor is properly maintained and stays in good operating condition for the maximum time.

Module 9 - 19 Minutes

Crawler-Tractor Operation, Part 1

Covers instruments and controls, important safety rules of operation, pre-operation checks, how to start the engine, how to operate the blade and its controls, how to use the ripper, basic maneuvers including moving forward, moving backward, turning, and parking. All procedures are demonstrated in detail by the model operator, and described by the narrator.

Module 10 - 15 Minutes

Crawler-Tractor Operation, Part 2

The operator sees and hears step-by-step how to use the Crawler Tractor effectively in bulldozing, stockpiling, ditching, cutting a roadway, finishing slopes, backfilling, removing stumps and rock, clearing land operations. Two techniques of bulldozing, slot dozing and side-by-side dozing, are demonstrated clearly. Towing and transporting a crawler-tractor are also discussed.

Module 11 - 20 Minutes

Operator Daily Maintenance of Rollers

What can you - the operator - do to help keep your roller working at its best? The key is to follow the daily maintenance procedures for rollers including steel-wheel rollers, pneumatic tire rollers and vibratory rollers presented in this video tape. The procedures cover all required daily maintenance activities on the rollers, beginning from the pre-start check, through the equipment warm-up check and the daily operations check to the shut-down activities at the end of the day.

Module 12 - 16 Minutes

Roller Operation, Part 1

Trainees are given basic information on the major types of rollers including static and vibratory rollers, steel wheel, sheepfoot and pneumatic rollers and their uses, safety procedures, instruments and controls, general operating tips, pre-operation checks, how to start the engine, basic maneuvers, and how to shut down the engine.

Module 13 - 19 Minutes

Roller Operation, Part 2

Rolling procedures for asphalt mix, soils, aggregate and gravel materials are demonstrated. Rolling phases, the rolling zone, rolling patterns, rolling techniques and vibration procedures are discussed in detail. How to determine the best pattern for a rolling job, how to achieve a maximum and uniform compaction and still keep up with production, are presented clearly. Techniques on rolling longitudinal joints and transverse joints are also included.

Module 14 - 15 Minutes

Operator Daily Maintenance of Asphalt Distributors

The module treats daily preventive maintenance requirements and procedures for asphalt distributors. Daily maintenance is required in four areas: the pre-start check, the warm-up check, the daily operating check, and the shut-down check. The test of the distribution power system, the inspection and cleaning of the bitometer, the test and adjustments of the spray bar and nozzles, and procedures for cleaning out the asphalt distribution system are all presented and described.

Module 15 - 30 Minutes

Asphalt Distributor Operation

The module covers instruments and controls, safety practices, general operating tips, preparing the distributor for operation, filling the distributor from a supply source, heating the bitumen in the distributor, adjusting the spray bar and nozzles, and spraying operations. Operations procedures for spraying road lanes and shoulders are demonstrated. How to get a uniform spraying at desired spray rate is also discussed. Hand spraying, pump-off and drawing materials in the bar back to the tank, and draining and flushing the circulating system, spray bar and tank are presented in detail.

Module 16 - 18 Minutes

Operator Daily Maintenance of Dump Trucks

> Step-by-step daily maintenance procedures on dump trucks include (1) the walk around pre-start inspection which consists of checking tire pressure, looking for loose or worn parts, inspecting for fluid leaks, checking fluid levels, and draining fuel and air tanks of dirt and condensation; (2) the warm-up check which covers starting the engine, checking gauges, lights, hydraulic hoist system, steering system, and testing brakes; (3) the daily operating check which comprises listening for unusual noises, reading gauges frequently and being aware of any changes in the truck's performance; and (4) the shut-down check requirements which are: filling the fuel tanks, cleaning the equipment, parking on a level surface, setting the parking brake, idling the engine, and recording hour meter readings.

Module 17 - 24 Minutes**Dump Truck Operation**

Trainees observe and hear explanation of instruments and controls, safety practices, operation tips, pre-operation checks, basic maneuvers, and procedures for shifting a typical 10-speed manual transmission. Starting, turning, stopping, backing procedures are clearly presented. Loading, dumping procedures including single pile dumping, spot dumping and spreading thin lifts are shown.

Module 18 - 16 Minutes**Driver Daily Maintenance of Light Vehicles**

Shows the driver how to perform proper daily preventive maintenance procedures on light vehicles such as pick-ups and station wagons - and why these procedures are necessary. Detailed maintenance activities from the pre-start check to the shutdown check at the end of the day are demonstrated step-by-step.