



Voith DIWA Transmission Training 2022 Training Pricing

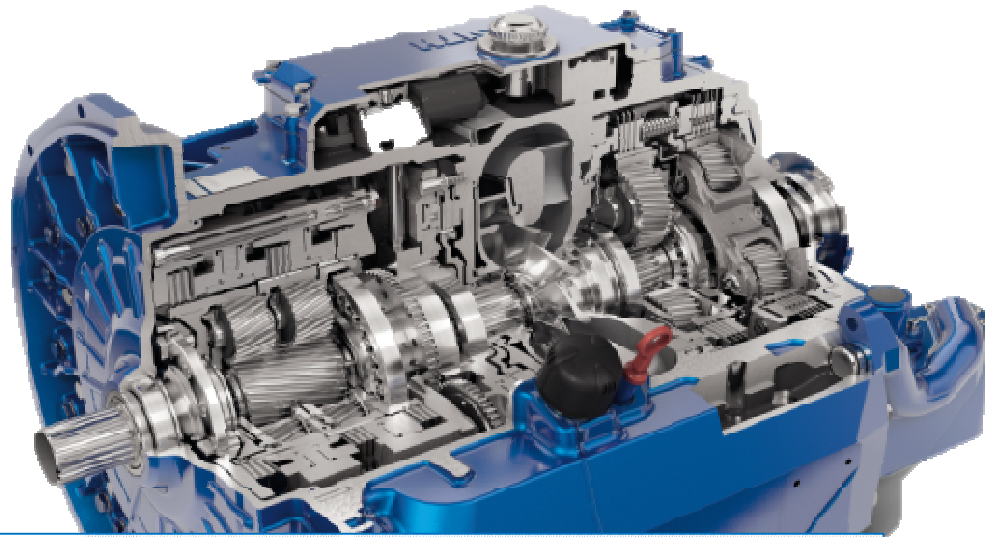
Voith DIWA Transmission Training

2022 Training Pricing

VOITH

Classes and Location	Number of Students	Notes*	Class Duration in Days	Price
Maintenance Training (Customer location)	8	B,D,P	1	\$5,600.00
Maintenance Training (Customer location)	15	B,D,P	1	\$8,750.00
Fault Finding Training (Customer location)	8	B,D,P	2	\$9,200.00
Overhaul Training (Customer location)	8	T,D,P	3	\$12,800.00
Overhaul and Fault Finding Training (Customer location)	1	T,P,F	4	\$3,800.00
Overhaul and Fault Finding Training (Customer location)	8	T,P,F	4	\$16,400.00
Train the Trainer (TtT) (Customer or VSP) See the TtT section of this presentation.	1			\$18,000.00

*See the notes on the subsequent slide.



Voith DIWA Transmission Training Train the Trainer (TtT) Certification Requirements

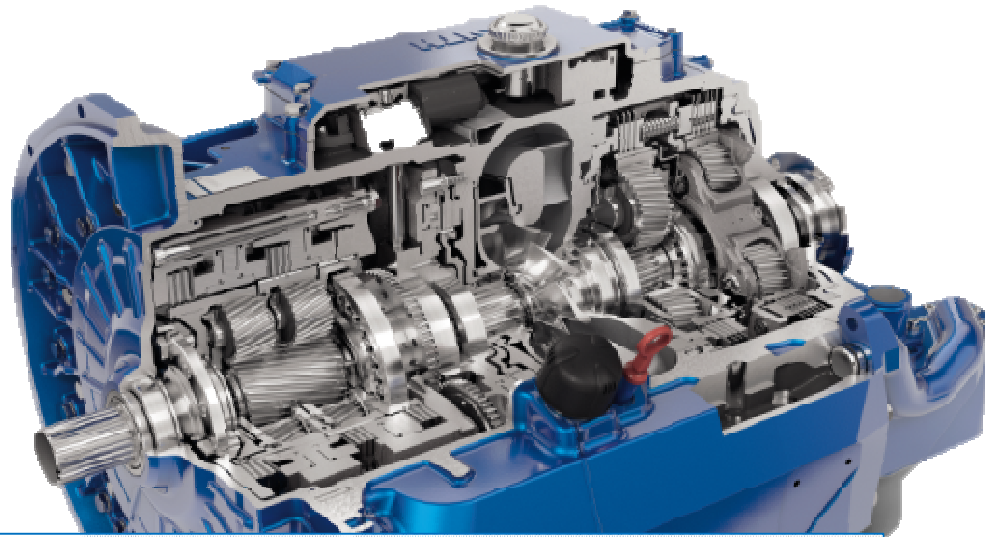
Voith DIWA Transmission Training

2022 Training Pricing—Notes

VOITH

- B.** Customer will need to provide a bus.
- S.** Please contact the Voith Training Department, VTI-RoadService@voith.com for more information.
- D.** Classes are presented on Monday, Tuesday, Wednesday, and/or Thursday during **dayshift** only.
- T.** Customer will need to supply a clean transmission and tooling. Please note, this class is not intended to overhaul your transmission, but it is designed to teach the students how to perform an overhaul.
 - 1. See tooling list in subsequent slides.
 - 2. If needed, a transmission can be shipped for an additional charge.
- P.** The online Prerequisite Course, **Introduction to DIWA**, is recommended prior to attending the Overhaul Course.
- F.** Classes are delivered Monday through Thursday, or Tuesday through Friday.

NOTE: Voith will not be responsible for travel costs incurred by attendees (travel, lodging, food, etc.). There will be a charge of \$500.00 US dollars for each student above the maximum limit. All prices and schedules are subject to change without notice. All prices are in U.S. dollars. Travel outside of the Contiguous USA (48 states) will result in additional charges. The classes listed above are not for warranty training.



Voith DIWA Transmission Training Overhaul and Fault Finding Tooling Requirements

Voith DIWA Transmission Training

Overhaul and Fault Finding Tool Requirements

VOITH

Description	Voith Part Number	Quantity Required
Transmission Stand (Example: Kent-Moore)	Procure Locally	1
Voith Transmission Adapter	DRW 5-3100.10*	1
ALADIN Diagnostic Software (Download from www.voithusa.com/road)	15000097837 or 15001188713	1
Measuring Cable	15000248410	1
Diagnostic Forced Download Adapter	15000115710	1
Voith BlueCom Diagnostic Interface (Bluetooth and USB)	15100400642	1
Pressure Gauge	H59209311	2
Test Cover	15000950610 Kit or 15000948110 Bare Cover	1

*The Voith Transmission Adapter must be fabricated locally using the DRW 5-3011.10 drawing available at www.voithusa.com/road.

Voith DIWA Transmission Training

Overhaul and Fault Finding Tool Requirements



Description	Voith Part Number	Quantity Required
Input Drive Puller	H59048110	1
T Handle M10 4	H58274011	1
CV ½ Bit, Long, 5mm	H02011195	1
CV ½ Bit, Long, 6mm	H02011196	1
CV ½ Bit, Long, 8mm	H02011197	1
CV ½ Bit, Long, 10mm	H02011198	1
CV ½ Bit, Long, 12mm	H02011199	1
CV Bit Holder	H02011204	2
CV ½ Bit, Short, 12mm	H02011190	1

Voith DIWA Transmission Training

Overhaul and Fault Finding Tool Requirements



Description	Voith Part Number	Quantity Required
CV ½ Bit, Short, 10mm	H02011189	1
CV ½ Bit, Short, 8mm	H02011188	1
CV ½ Bit, Short, 6mm	H02011187	1
CV ½ Bit, Short 5mm	H02.011186	1
CV Bit Key, 6mm	H01006085	1
CV Bit Set 3/8 Drive	304003145	1
Removal Screw, 8mm	H50068210	2
Removal Screw, 10mm	H50068311	2
Removal Screw, 12mm	H50068410	2

Voith DIWA Transmission Training

Overhaul and Fault Finding Tool Requirements



Description	Voith Part Number	Quantity Required
Solenoid Plug Removal Tool	H68153510	1
Solenoid Plug installation Tool	15000014510	1
Cable Harness Plug Removal Tool	H68153410	1
Cable Harness Plug Install Tool	H68153310	1
Line Socket Temperature Sensor M12	15001331610	1
Speed Sensor Installation Tool	15001331310	1
Input Cover Seal Installation Tool	H64143710	1
Output Cover Seal Install Tool (DIWA.6)	15001331410	1
Output Cover Seal Install Tool (DIWA.5)	H64.1436XX	1
Adjustment Tool (Yoke)	15000045810	1

Voith DIWA Transmission Training

Overhaul and Fault Finding Tool Requirements



Description	Voith Part Number	Quantity Required
Hexagon Bolts M10x70	H01000090	3
Turbine Gear Installation Tool	15000030611	2
TB Circlip Installation Tool	15100198410	1
TB Friction Disc Alignment Tool	15001331510	1
E Clip Spring Compression Tool	15000061610	1
E Clip Spring Compression Tool	15000061410	1
Pump Shaft Circlip Installation Tool	15000383410	1
Pump Impeller Circlip Installation Tool	15000398710	1

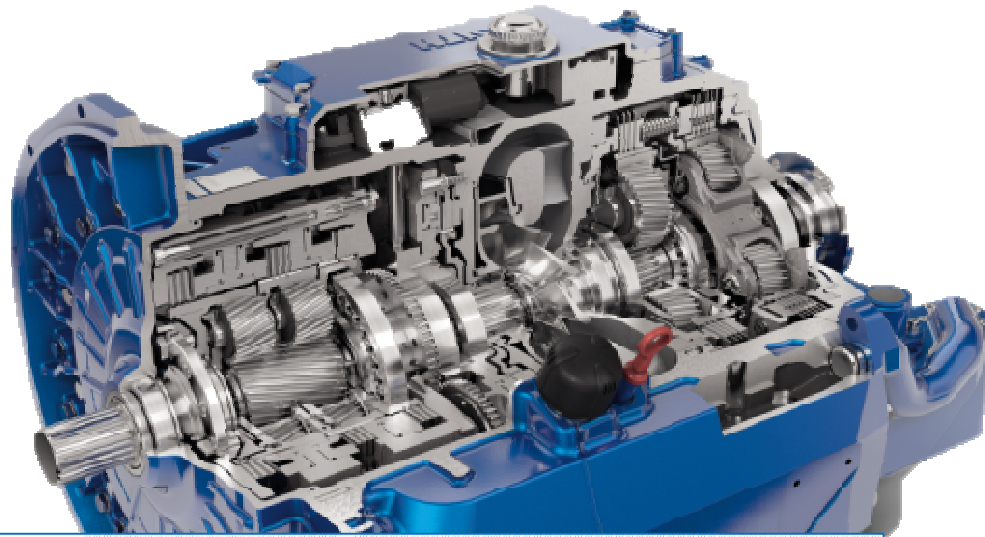
Voith DIWA Transmission Training

Overhaul and Fault Finding Tool Requirements— Manufacture Locally



Description	Voith Drawing/Reference Number	Quantity Required
Voith Transmission Adapter	DRW 5-3100.10*	1
33mm Gear Pump Bearing Driver	ZMP180815	1
Gear Pump Pin Puller	ZMP100127B	1
Bearing Driver	ZMP100128	1
Bearing Driver Set	ZMP100128A	1

*The Voith Transmission Adapter must be fabricated locally using the DRW 5-3011.10 drawing available at www.voithusa.com/road.



Voith DIWA Transmission Training Voith Service Provider (VSP) Certification Requirements

Voith DIWA Transmission Training

Voith Service Provider (VSP) Certification Requirements

1. Initial Voith Service Provider (VSP) technician certification requires participation in the Overhaul and Fault Finding (OHFF) class, which provides a two-year certification.
2. To maintain certification beyond the initial two-year period, the VSP technician must participate in a Regional Training Event, which provides an additional two-year certification.

For example, if a VSP technician is certified in June of 2019, they would need to participate in a Regional Training Event in 2021 to maintain certification. The technician would then need to participate in a Regional Training Event in 2023, and so on.

See the notes on the subsequent slide.

Voith DIWA Transmission Training Voith Service Provider (VSP) Certification Requirements—Notes

- A. Up to a six-month grace period for VSP recertification is provided depending on regional class availability.

Voith DIWA Transmission Training

Voith Service Provider (VSP) Certification

Requirements—Overhaul and Fault Finding (OHFF)

VOITH

VOITH

Voith DIWA Overhaul and Fault Finding Course

COURSE OBJECTIVE:

This course is a comprehensive, familiarization, and overhaul course that provides a participant with the skills and knowledge necessary to perform troubleshooting, repair, and overhaul of the Voith DIWA transmission. This course delves into, the electrical, hydraulic, and mechanical systems, as well as troubleshooting. With the successful completion of this course, a technician will be certified as an authorized Voith Service Provider (VSP).

COURSE LENGTH: This four-day class can be held at our location or at the customer's facility.

Voith DIWA Transmission Training

Voith Service Provider (VSP) Certification

Requirements—Overhaul and Fault Finding (OHFF)

VOITH

COURSE OUTLINE:

- I. INTRODUCTION TO VOITH
- II. VOITH USA WEBSITE ACCESS
- III. VOLT LOG-IN
- IV. IDENTIFICATION TAG
 - a. DIWA (meaning)
 - b. Type
 - c. Model
 - d. Pattern
- V. TRANSMISSION COMPONENT LOCATION
- VI. CONVERTER OPERATION
 - a. Identify parts of the converter
 - b. Explain flow
- VII. MECHANICAL PRINCIPLES
 - a. Overview of the gearbox
 - b. DIWA Principle
 - c. Power Splitting principle

Voith DIWA Transmission Training

Voith Service Provider (VSP) Certification Requirements—Overhaul and Fault Finding (OHFF)

VOITH

- VIII. TEAR DOWN
 - a. Remove output section
 - b. Remove Input differential
 - c. Remove hydraulic lines
 - d. Remove control valve assembly
- IX. MECHANICAL COMPONENT QUIZ
- X. HYDRAULIC PRINCIPLES
 - a. General Information
 - A. Main Operating Pressure
 - B. Converter Pressure
 - b. Operating Principles
 - A. Major Components
 - B. Converter Filling Control
 - c. Flow diagrams
- XI. HYDRAULIC SYSTEM QUIZ

Voith DIWA Transmission Training

Voith Service Provider (VSP) Certification Requirements—Overhaul and Fault Finding (OHFF)

VOITH

- XII. INSPECTION OF THE TRANSMISSION COMPONENTS
 - a. Failure Analysis
 - b. Inspection and testing of parts for failure modes
 - c. Assembly procedure of sub-assembly
- XIII. REASSEMBLY OF THE TRANSMISSION
 - a. Assembly procedures
 - b. Shimming specifications
 - c. Torque specifications
- XIV. ELECTRICAL PRINCIPLES
 - a. Components
 - b. CAN System (Interface with Engine)
 - c. Schematic Analysis
- XV. SERVICE REQUIREMENTS
 - a. Review oil specifications

Voith DIWA Transmission Training

Voith Service Provider (VSP) Certification Requirements—Overhaul and Fault Finding (OHFF)

VOITH

- XVI. REVIEW OF PARTS BOOK
 - a. Review of Service Bulletins
 - b. Review of Parts Bulletins
- XVII. DIAGNOSTIC SOFTWARE
 - a. ALADIN
 - b. DIANA
- XVIII. ELECTRICAL SYSTEM QUIZ
- XIX. PRACTICAL EXERCISE IN TROUBLESHOOTING
 - a. Use of diagnostic and breakout cable
 - b. Loading software into ECU using Aladin
- XX. FINAL EXAM

Voith DIWA Transmission Training

Voith Service Provider (VSP) Certification Requirements—Regional Training Event Topics

1. Voith USA website access—www.voithusa.com/road
2. Voith Service Provider (VSP) certification requirements
3. Review of DIWA Power Flows
4. Review of the hydraulic system
5. Review of the electrical system
6. ALADIN with usage examples
7. DIANA with usage examples
8. Current Service Bulletins
9. Component reuse guidelines

Thank you!