

A number of years ago Bosch Rexroth Canada had been contracted to provide a course on hydraulic design for a local steel manufacturer. As a prerequisite to the course the students were required to complete the five day "basic hydraulics" seminar. One of the attendees was outraged at this idea stating that "after being in the industry for more than 20 years he certainly did not need a basic course". I remember this instance because when he approached me at the end of Wednesday's session of the Basic Hydraulics course he proclaimed that "he didn't realize how much he didn't know".

We often receive enquiries from customers asking if they can skip the prerequisite HYi-101 course and take the level 2 course directly. In a nutshell we would say that **the HYi-101 is much more than an "introductory hydraulics class"**. Hopefully the following gives a concise overview of the first and second level course offerings.

**HYi-101** gives an overview and comprehensive understanding of hydraulic control technology. How to read and interpret schematics and understand the operation of the individual components within the hydraulic system and how these components interact together in a control circuit or system. Time in the lab is dedicated to connecting and operating typical hydraulic circuits to re-enforce the classroom theory. This lab time also includes understanding how to properly adjust and set components such as pump compensators, pressure control valves and flow control valves

Approx. 50% classroom, 50% hands-on

17 lab experiments

1 homework problem

Prerequisite: General algebraic skills.

Although we begin from basic principles some general understanding of industrial machinery and hydraulics theory and application is helpful.

**HYi-201** builds on the principles and information learned in the HYi-101 course and is recommended for plant maintenance personnel who have responsibility for the proper upkeep of industrial hydraulic systems. Students work in the classroom and in the lab to further refine their hydraulic component and circuit understanding and develop their ability to read hydraulic system schematics which inherently leads to the development of schematic based troubleshooting skills. Component and system failure modes will be investigated and predictive and preventative maintenance strategies will be discussed.

More than 60% hands-on time

Prerequisite:

Bosch Rexroth HYi-101 or other industry provided hydraulic training (above trades or academic learning) is strongly recommended as well as a firm understanding of hydraulic principles and applications

**HYi-202** is directed towards advanced maintenance technicians and hydraulic project engineers who wish to learn to properly select and size hydraulic components that will produce efficient hydraulic circuits that are able to properly control the machine or process. This course builds on the fundamental material covered in the HYi-101 course. The topics covered investigate specific case scenarios with regard to the proper application and sizing of the components in the system as well as the design of hydraulic systems and selection and application of peripheral devices. These peripheral devices include reservoir design and sizing, fluid selection, filter sizing and selection, calculating heating and cooling requirements as well as the sizing and selection of pipework etc.

Sizing and selection of pumps and prime movers and actuators as well as accumulators and pressure, flow and directional valves etc. will be covered in detail

Approx. 75% classroom, 25% hands on

4 lab experiments

Numerous in-class component sizing and selection examples

6 homework problems

Prerequisite:

Bosch Rexroth HYi-101 or other industry provided hydraulic training (above trades or academic learning) is strongly recommended as well as a firm understanding of hydraulic principles and applications

Strong algebraic math skills and the ability to manipulate and transpose various hydraulic related algebraic equations.

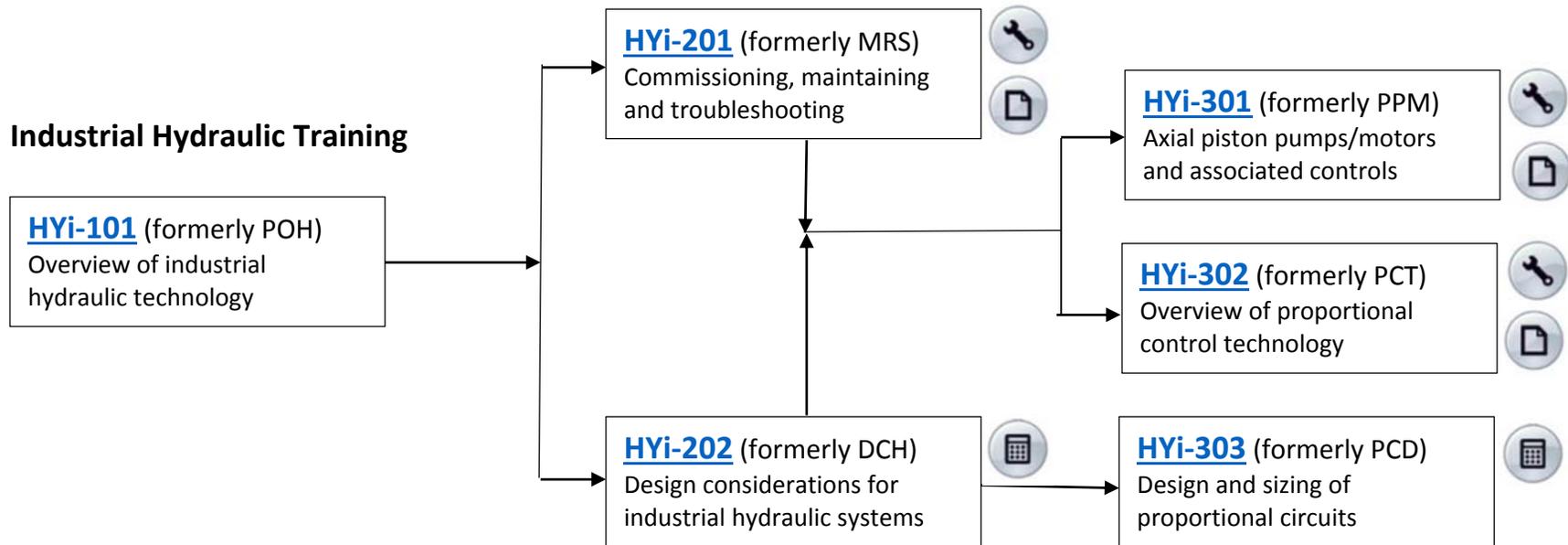
I have no doubt that the highest rate of return of all of the offerings in our training calendar are the first level HYi- 101 (industrial) or HYm-101 (mobile) courses. Without this solid foundational knowledge one cannot hope to receive full value from any of the higher level course offerings. There is no trades training program in North America which covers even a portion of the material presented in these seminars so if you are questioning your need to take this course please give us a call or email us and we will help you in your decision. We want to ensure that you receive the best value for your training dollar and that you are completely satisfied with the training you receive. As I stated to this gentleman many years ago, "if you don't think that the course was beneficial we will be glad to credit your tuition towards the next level course offering". The offer still stands and we have yet to be taken up on it since 1997.



Doug Wilson, Fluid Power Training Manager  
Bosch Rexroth Canada

## Course Progression

### Industrial Hydraulic Training



### Mobile Hydraulic Training

