

NADCA EC – 406.1 Advanced Machine Hydraulics for Die Casting



This course provides an in-depth study of industrial hydraulic systems with emphasis on applications found in modern high-pressure die casting machinery. The course compares open-center and closed-center hydraulic systems, examines pressure-compensated variable-displacement pumps and their internal operation, and explains how hydraulic flow and pressure are controlled throughout an operating cycle. Students learn the function and operation of major hydraulic valves including relief valves, pressure-reducing valves, sequence valves, counterbalance valves, shuttle valves, and directional control valves.

Course Summary

Advanced Machine Hydraulics is an advanced technical training course designed for hydraulic maintenance personnel, maintenance technicians, engineers, and machine specialists responsible for troubleshooting, maintaining, and optimizing industrial hydraulic systems used in high-pressure die casting equipment. The course builds upon fundamental hydraulic principles and develops a practical understanding of how modern hydraulic circuits operate in conjunction with PLC-controlled automation.

Participants will study hydraulic circuit development, pressure and flow control, open-center and closed-center systems, accumulators, pressure-compensated variable-displacement pumps, directional control valves, pressure control valves, and specialized hydraulic components commonly found in modern die casting machines. The course emphasizes system operation, component interaction, failure analysis, and troubleshooting techniques that improve machine reliability, reduce downtime, and increase production efficiency.

Date

Sept 2nd, 2026

Location

*Cascade Die Casting Group – Sparta, Mi.
9983 Sparta Ave NW, Sparta, Mi 49345*

Class Time: 8:00am - 4:30 pm

Instructed By: Paul Brancleon, NADCA

Cost and Signup

Cost: Free for current individual chapter 3 members of NADCA.

\$105.00 for non-members, this will activate your membership, which allows the opportunity to take advantage of all the NADCA items. PayPal available.

Email: Don Torrey at Dtorrey13@Comcast.net to sign up.