



*Flow Solutions*

# Product Training



**Flow Solutions**

## **Control Valve Theory & Application Workshop**

**Course Code: SMPTC (B&A) 001**

- Duration : 5 days  
Location : Regionally or at manufacturing facility  
Instructors : Product Development and Application Engineering  
Content : Control Valve theory in sizing, noise prediction, cavitation prediction and the application of those theories in product selection and pricing include hands-on session.  
Prerequisite : Product Knowledge  
Objective : To define the ISA/IEC control valve sizing formula, industry manufacturing standards and basic valve design. To define the IEC noise prediction method as it applies to valve types, trim types and path treatment. To define the Sigma factor as it applies to the prediction of cavitation damage. To apply the stated theories in the selection of control valves for critical service applications. ValSpeQuicksizer, Masoneilan's Windows based sizing program will be utilized in the daily exercise and pricing.
- Day One : Terminology, standards, sizing, actuation, valve types and features, flow profile and energy management.  
Day Two : Cavitation & Noise  
Day Three : Application of above (including valve specs and pricing)  
Day Four : Application of above (including valve specs and pricing)  
Day Five : Hands-on session

## **Safety & Safety Relief Valve Theory & Application Workshop**

**Course Code: SCPTC (B&A) 002**

- Duration : 5 days  
Location : Regionally or at manufacturing facility  
Instructors : Product Managers and other subject matter experts  
Content : Pressure relief technology, in-depth Consolidated product review and their application, and ASME Code overview.  
Prerequisite : Product Knowledge  
Objective : To leave the salesperson with all the necessary product, product application, Hands-on session and code knowledge to competently sell Consolidated valves.
- Day One : Pressure relief technology, ASME Code overview, Consolidated spring loaded safety relief valves. Quiz.  
Day Two : Consolidated pilot operated safety relief valves and its technology, power industry and the safety valves. Quiz.  
Day Three : Consolidated electromagnetic ball valve sizing and selection program. Quiz.  
Day Four : Sizing & Pricing  
Day Five : Hands-on Session



**Flow Solutions**

**Control Valve Theory & Application Workshop For Customer  
Course Code: SMPTC (B&A) 003**

Duration : 3 days  
Location : Regionally or at manufacturing facility  
Instructors : Product Development and Application Engineering  
Content : Control Valve theory in sizing, noise prediction, cavitation prediction and the application of those theories in product selection include hands-on session.  
Prerequisite : Some Knowledge on Control Valves  
Objective : To define the ISA/IEC control valve sizing formula, industry manufacturing standards and basic valve design. To define the IEC noise prediction method as it applies to valve types, trim types and path treatment. Product overview

Day One : Terminology, standards, sizing, actuation, valve types and features, flow profile and energy management.  
Day Two : Cavitation, Noise and Product Overview  
Day Three : Hands-on session

**Safety & Safety Relief Valve Theory & Application Workshop For Customer  
Course Code: SCPTC (B&A) 004**

Duration : 3 days  
Location : Regionally or at manufacturing facility  
Instructors : Product Managers and other subject matter experts  
Content : Pressure relief technology, Consolidated product review and their application, and ASME Code overview.  
Prerequisite : Some Knowledge on Safety & Safety Relief Valves  
Objective : To understand all the necessary products, product application as well as Hands-on session.

Day One : Pressure relief technology, ASME Code overview, Consolidated spring loaded safety relief valves. Quiz.  
Day Two : Consolidated pilot operated safety relief valves and its technology, power industry and the safety valves. Quiz.  
Day Three : Hands-on Session



**Flow Solutions**

## **Masoneilan Competitive Selling Workshop**

**Course Code: SMPTC (S) 005**

- Duration : 2 days  
Location : Regionally or at manufacturing facility  
Instructors : Product Managers and Sales Management  
Content : Extensive competitive analysis of marketing strategies sets the stage for a review of DFC core products, the competition, and the customer  
Prerequisite : Product Knowledge, Control Valve/Theory & Application  
Objective : To equip the field salesperson to SELL our product based on its strengths and benefits. To highlight the market strategy of DFC and of the competition and to enhance the sales capabilities of our sales force. The current economic atmosphere demands that our sales force be keenly aware of the competition, acutely sensitive to the driving force behind a customer's purchasing strategy and totally equipped with the strengths, advantages and benefits of DFC's products and programs. Documented test results to back up product claims are provided. Strengths and weakness of each product line are recognized. Success stories are included. Case studies, role-plays and interactive sales activities are provided for application exercises. This is an evolving program. The content will be expended with the input from each session. Current program includes 21000, 25000, 41000, 78200, "V" Log, 35002, 30000, T-Ball, 36004, Instruments and SVI.
- Available : Overheads with workbooks, Competitive Selling Reference Manual

## **Consolidated Competitive Selling Workshop**

**Course Code: SCPTC (S) 006**

- Duration : 2 days  
Location : Regionally or at manufacturing facility  
Instructors : Field sales experts  
Content : Extensive competitive analysis of marketing strategies sets the stage for a review of DFC core products, the competition, and the customer.  
Prerequisite : Product Knowledge, Safety & Safety Relief Valves Theory & Application  
Objective : To equip the field salesperson to SELL our product based on its strengths and sales capabilities of our sales force. The current economic atmosphere demands that our sales force keenly aware of their competition, acutely sensitive to the driving forces behind a customer's purchasing strategy and totally equipped with the strengths, advantages and benefits of DFC's products and programs. Strengths and weakness of each product line are recognized. Success stories are included. Case studies, role-plays and interactive sales activities are provided for application exercises. This is an evolving program. The content will be expended with the input from each session. Current program includes 1700, 1811, 1511, 2700, 1900, 19000, MPV, 2900 and 82000.
- Available : Overheads with workbooks, Competitive Selling Reference Manual



**Flow Solutions**

**Sales – Severe Service Solutions Seminar**  
**Course Code: SMPTC (SS) 007**

Duration : 2 days  
Location : Regionally or at manufacturing facility  
Instructors : Application Engineering – Severe Service Product Specialists  
Content : In depth overview of the products (valves and trim styles) available for critical applications. Discussion of the “Energy Management” approach to product selection. Competitive review. Application exercise (ValSpeQ w/Vlog).  
Prerequisite : Product Knowledge and Control Valve Theory & Application  
Objective :To apply the stated theories in the selection of the control valve and/or trim features in severe service applications. Application review by product and industry application. ValSecQ, Masoneilan’s Windows based sizing program will be utilized in the daily exercises.  
Day One : Compressible fluids – critical applications – product selection.  
Non- Compressible fluids – critical applications – product selection.  
V-log/L-log Marketing Strategy and competitive overview.  
Day Two :Technical Paper. Practical Application Exercise.

**Product  
Service Training**

## GTC Training



### **Green Tag Shop Technician Level I Course Code: GTC 001**

Duration	: 5 days
Location	: Dresser Singapore Pte Ltd
Instructors	: Certified Repair Mechanics/Technicians
Content	: Provides an introduction to pressure relief valve design and operation. ASME Boiler and Pressure Vessel Code and its application to pressure relief valves is discussed. In depth, product training is provided for Safety [1511, 1811, 1541, 1543, 2478] and Safety Relief [1982, 1990, 2900, 3900, 1900,2900, 3900, 1900 and 19000] valves.
Prerequisite	: 6 months on-the-job experience (with GTC) and successful completion of 1900 Self Study Course and test (required pre class). Demonstrate the ability to assemble, set and test 1900 series SRV on air, water and steam and pass written test covering terminology.
Objective	: To certify the technician as a factory certified Green Tag Shop Technician, capable of setting and testing a steam valve and air valve according to the ASME Boiler and Pressure Vessel Code Section I & VIII. Upon successful demonstration of those procedures and a score of 80% or higher on a written test, the technician will be issued a three year certificate as "Green Tag Shop Technician Level I."
Available	: Video and PowerPoint Presentations with class documentation "hands on" participation with demo equipment and test bench required.

### **Green Tag Shop Technician Level I, Re-certification Course Code: GTC 003**

Duration	: 5 days
Location	: Dresser Singapore Pte Ltd
Instructors	: Certified Repair Mechanics/Technicians
Content	: Review of previous content plus any additional equipment on features that have been added since original certification.
Prerequisite	: Successful completion GTC Shop Technician Level I and less than 3 years on the job as Shop Technician, Level I.
Objective	:To re-certify the technician as a factory certified Green Tag Shop Technician, capable of setting and testing a steam valve and air valve according to the ASME Boiler and Pressure Vessel Code Section I & VIII. Upon successful demonstration of those procedures and a score of 80% or higher on a written test, the technician will be issued a three year renewal to his certificate as "Green Tag Shop Technician Level I."
Available	: Video and PowerPoint Presentations with class documentation "hands on" participation with demo equipment and test bench required.

## **Green Tag Shop Technician Level II**

### **Course Code: GTC 002**

Duration	: 5 days
Location	: Dresser Singapore Pte Ltd
Instructors	: Certified Repair Mechanics/Technicians
Content	: Provides review on Pressure Relief Technology . In depth product training is provided for Safety [1700, 2700] and diagnostic equipment [2566 Electronic Valve Tester, 1566 Hydroset Valve Setting device and valve reseating machine].
Prerequisite	: Successful completion GTC Shop Technician Level I and less than 3 months on-the-job as a Level I Technician
Objective	: To certify the technician as a factory certified Green Tag Shop Technician, Level II. Successful completion of the course will be evaluated as the learner demonstrates set and test of a Maxiflow Steam Valve according to ASME Code Section I and a score of 80% or higher on a written test. A 3-year certificate "Shop Technician Level II" issued upon completion.
Available	: Video and PowerPoint Presentations with class documentation "hands on" participation with demo equipment and test bench required.

## **Green Tag Shop Technician Level II, Re-certification**

### **Course Code: GTC 011**

Duration	: 5 days
Location	: Dresser Singapore Pte Ltd
Instructors	: Certified Repair Mechanics/Technicians
Content	: Review of original Level II content plus any products or features added since original certification.
Prerequisite	: Successful completion GTC Shop Technician Level II and less than 3 years on-the-job as a Level II Technician
Objective	: To re-certify Shop Technician Level II. Successful completion will be accomplished by passing a written re-certification test and demonstrating the assembly and test of a selected Consolidated product. The product shall be either Section I or VIII depending on sponsoring GTC facility capability (steam, air or liquid test facility). ASME Boiler & Pressure Vessel requirements for set pressure and blowdown, Section I and Section VIII will govern the setting and testing of the valve.
Available	: Video and PowerPoint Presentations with class documentation "hands on" participation with demo equipment and test bench required.





**Flow Solutions**

**Green Tag Field Service Training**  
**Course Code: GTC 004, 005, 006**

Duration : see below

Location : see below

Instructors : Sr. Certified Repair Mechanics/Technicians

Content : The Green Tag Field Service Program is designed to take the technicians from an assembly and repair environment to a knowledge level required to successfully work at a customer's site. This is a three-phase training and certification process which consists of two weeks formal classroom training (Phase I), and a period of supervised on the job training with the Green Tag Center, followed by an audit of the candidates activities at the job site (Phase II). Phase III is a comprehensive testing program involving a written test and a full steam set and test requirement for each candidate.

Prerequisite : Certification as a Green Tag Shop Technician Level I or II and six months experience following that certification.

Objective : To enable the learner to perform in the field as a competent "Field Service Technician." The learner will gain the skills necessary to identify, analyze and resolve Safety and Safety Relief valve related problems utilizing the correct tools and techniques.



**Flow Solutions**

## **FIELD SERVICE PHASE I**

**Course Code: GTC 004**

Duration: 10 days

Location: Dresser Alexandria / Dresser Singapore Pte Ltd

The products that are addressed in the Field Service Training are as follows:

- 1700 Series "Maxiflow" Safety Valve
- 2700 Series Safety Valve
- Valve Reseating Machine
- EVT – Electronic Valve Tester
- Hydroset Auxiliary Lifting Device
- 1500 Series Safety Valve,
- Electromatic valves
- 1538VX-VC, 1533VX, 2533VX
- 3500 Electromatic Ball Valves

Training in each product listed includes instruction and hands on practice in the following areas:

Initial visual inspection	Disassembly
Cleaning	Component inspection
Restoration	Assembly
Testing	Trouble shooting
Retrofitting and Conversions	Documentation of as found conditions
Documentation of repairs	Applicable ASME Code requirements
Product application information	Installation requirements

Procedures for review include:

- Typical Product Maintenance Training Class outlines (See Appendix B)
- General Safety Rules (Lock out/ Tag Out).
- ASME Section I and VIII Field Installation Trouble Shooting.
- Customer Processes and Applications
  - Electrical Power Plants
  - Paper Mills
  - Oil Refineries / Chemical Plants
- Customer Interface skills.



**Flow Solutions**

## **PHASE II, FIELD EVALUATION**

**Course Code: GTC 005**

Duration: As required

Location: GTC Customer Site

Occurs once the technician and the Green Tag Center feel the technician has worked “on-the-job” under competent supervision and has gained the skills necessary to perform as a competent Field Service Technician. Phase II, requires the technician to demonstrate the proper skills, tools and methods in the field with a training auditor. This demonstration is performed in the presence of a Consolidated® Training auditor, who will evaluate the technician’s “hands on” performance at a customer’s site.

### **Audit Requirements**

- Respond to the customers requirements
- Utilize Manuals including the
- Repair Inspection Criteria Manual (Green Tag Manuals)
- Installation Operation and Maintenance Manuals
- Use Calibrated Measuring Tools.

Requires: GTC Job presence on customer Site.

**NOTE : The fee does not includes the cost for Certified Auditor**

## **PHASE III: CERTIFICATION TESTING**

**Course Code: GTC 006**

Duration: 3 days

Location: Dresser Singapore Pte Ltd / Dresser Alexandria

After successful completion of the second phase, the third phase involves:

- A score of 80% or better on a 200 question written test on Consolidated® Products and a hand on exercise to test participant’s ability to calibrate a Maxiflow Safety Valve by steam setting and the use of the 1566-2 Hydroset / EVT.
- Field Service Technician Certificate issued, valid for 3 years.



## **RE-CERTIFICATION OF GREEN TAG FIELD SERVICE TECHICIANS**

### **Course Code: GTC 007**

Duration: 5 days  
Location: Dresser Singapore Pte Ltd

Field Service Re-certification shall require attendance at a Field Service Technician Re-certification Seminar. The seminar shall consist of:

- Consolidated® Field Service Product Update Presentation,
- Written test
- "hands-on" 1700 Series "Maxiflow" Calibration test

The Field Service Re-certification Class will be periodically held. A Field Service Technician who has been certified by the Consolidated® Product Training Manager, shall be eligible for re-certification within three calendar years following the date of completion of the Phase III Testing Program or the date of the re-certification class the technician last attended.

Available: Video and PowerPoint Presentations with class documentation  
"hands on" participation with demo equipment and test bench required.

## MARC Training

### **MARC Repair Mechanic Course Code: MAR 001**

Duration	: 5 days
Location	: Dresser Singapore Pte Ltd
Instructors	: Certified Repair Mechanics and Technicians
Content	: Satisfies the initial requirement for “Factory Trained” repair personnel in MARC contract
Prerequisite	: 6 months experience and Control Valve Repair Mechanic Trainee Qualifier Questionnaire
Objective	: To acquaint the repair technician with the “core” products of Masoneilan [21000, 35000, 41000 and related actuation & instrumentation] and the procedure for performing a “Class A Valve Repair” as defined in the MARC Manual. Successful completion includes written exam and actual demonstration of Class A Valve Repair. Certificate issued upon successful completion.
Available	: PowerPoint/Overheads with workbooks (demo equipment required)

### **Advanced Product Training Course Code: MAR 002**

Duration	: 5 days
Location	: Dresser Singapore Pte Ltd
Instructors	: Experienced Certified Repair Mechanics/Technicians
Content	: Includes the service and repair information on specific products that do not fall within the “core products” pattern. Provides another milestone to becoming recognized as a Masoneilan Field Service Technician.
Prerequisite	: 6 months experience following the successful completion of MARC Repair mechanic Week One
Objective	: To familiarize the repair technician with more advanced valve & actuator designs [78200 LincolnLog, double acting cylinders, 1280/12120/12300 liquid levels and regulators] and a hands-on workshop on Masoneilan’s diagnostic products [SVI & ValScope]. Upon completion of this training session, the learner will be able to calibrate all models of Masoneilan level heads, maintain torque tubes and displacers. Service and repair of the 78200 and related actuation and instrumentation is included. Mounting and calibration of the SVI using hand held, local push buttons and PC as well as taking and elementary analysis of the diagnostic readings from both the SVI and ValScope. Successful completion includes written exam and actual demonstration of instrument calibration, diagnostic readings and repair of 78200, cylinder actuators and liquid levels. Certificate issued upon completion.
Available	: PowerPoint/Overheads with workbooks (demo equipment required)



**Flow Solutions**

## **Field Service Technician**

**Course Code: MAR 003**

Duration	: 5 days
Location	: Dresser Singapore Pte Ltd
Instructors	: Instructor Certified Field Service Representatives, Product Engineers & Factory Technicians.
Content	: The theory of valve application and its effect on the control loop is stressed throughout this one-week session. Hands-on workshops using real life case studies are used to develop problem-solving expertise. Advanced diagnostic interpretation skills are also taught in this training program.
Prerequisite	: 6 months experience following the successful completion of MARC Repair mechanic Week Two
Objective	: To equip the trainee with a background in valve application and loop control. The proficient field service provider must be able and willing to resolve problems on site. In some instances, factory support is not available so the intent of this training course is to prepare the trainee for those circumstances. Our customers expect that service representatives be well versed in not only the repair of Masoneilan products but also their application and effect on the control loop. Students who have demonstrated their ability to work with the vast array of Masoneilan products and have a good understanding of basic mathematics and physics are good candidates for this level of training.
Available	: PowerPoint/Overheads with workbooks (demo equipment required)



***Flow Solutions***