

# **COURSE OVERVIEW IE0340** Metering & Custody Transfer System Operations

# **Course Title**

Metering & Custody Transfer System Operations

# **Course Reference**

IE0340

# **Course Date/Venue**

Session 1: January 27-31, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE Session 2: August 24-28, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed



AWAR

# **Course Duration/Credits**

Five days/3.0 CEUs/30 PDHs











This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

The course covers the concept of Metering & Custody Transfer System Operations. It is divided into 5 modules:-

# Module 1: Accuracy & Process Measurement

This module covers basic definitions, such as viscosity, repeatability, cavitation etc.; flow profiles and the effects on measurement; volumetric and mass flow rate.

Accuracy is important in terms of uncertainty of measurement; calibration; technical specifications and process requirements.

Flow Measurement including orifice plate and DP transmitter; multi-beam ultrasonic flowmeter; Coriolis mass meter; turbine meters amongst others.

Measurement, traditional methods such as Level capacitance and hydrostatic techniques are covered together with more modern technologies such as ultrasonic and radar measurements.



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IE0340-01-25|Rev.260|29 January 2025



### Module 2: Custody Transfer & Fiscal Flow Metering

This module examines the requirements of OIML R117; the subject of Custody Transfer in detail terms; flow calibration, dynamic and static; types of calibration rigs and calibration systems plus prover systems.

### Module 3: Terminal & Pipeline Systems

Included in this module are, terminal tank gauging; Lease Automatic Custody Transfer (LACT); sediment and water considerations; operational issues and associated equipment. Pipeline considerations including paraffin content; pipeline pressure and process characteristics. Truck custody transfer, marine and aviation, on-loading and off loading etc.

# Module 4: Monitoring and Controlling Losses

Loss control systems – an applied approach – model based system; leak detection / leak testing. Case studies of marine applications; measurement surveys and measurement reports. Multi-phase flowmetering and applications.

### Module 5: API Standards and Flowmeter Selection

API measurement standards and volume correction tables; temperature compensation; SG versus API gravity; net volume calculation exercise. Guidelines for flowmeter selection.

# Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply proper knowledge and skills in metering and custody transfer system operations
- Identify the terminologies and classification of fluid mechanics and be aware of the accuracy requirements and specifications for custody measurement and loss control
- Discuss the different types, selection & installation of flow measurement and level measurement
- Aware of the basic overview of OIML Recommendation R117 including its requirements and operation
- Identify the various types of flow calibration and meter provers and discuss its application
- Explain in detail the different types, methods and techniques used in custody transfer and list the equipments used in its operation
- Discuss pipeline meter considerations employed for liquid petroleum products
- Employ leak detection for liquid petroleum products
- Gain in-depth knowledge on loss control system and illustrate proper monitoring and controlling production losses
- Discuss the API Standards as applied to basic custody measurement
- Identify the proper selection and cost consideration of flow meters



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# Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK**<sup>®</sup>). The **H-STK**<sup>®</sup> consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.

# Who Should Attend

This course provides an overview of the major aspects of metering & custody transfer system operations for engineers and other technical staff who are in charge of custody measurement and loss control for petroleum products in oil/gas fields, gas plants, export facilities, refineries, marine terminals or bulk storage plants. Engineers, shift supervisors and other technical staff involved in meter proving and calibration will benefit from this course.

#### Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-ofthe-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures

- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

#### Course Fee

**US\$ 5,500** per Delegate + **VAT**. This rate includes H-STK<sup>®</sup> (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

#### Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.



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# Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

# Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

• **BAC** 

British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.



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#### Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Dr. Ahmed El-Sayed, PhD, MSc, BSc, is a Senior Electrical & Instrumentation Engineer with over 35 years of extensive experience in the Oil, Gas, Power, Petroleum, Petrochemical and Water & Utilities. He specializes in Fire Fighting System Instrumentations, Fire Protection System, Fire & Gas Detection & Alarm System, Instrumentation Protection Devices Maintenance & Testing, Protection Devices Troubleshooting, Water Meter Calibration, Liquid & Gas Flowmetering & Meter Calibration, Testing & Calibration of Energy Meters, DCS & ESD System Architecture, Distributed Control System, DCS & SCADA, Distributed Control System (DCS) Selection & Troubleshooting, Advanced DCS Yokogawa, Yokogawa CENTUM VP DCS,

Modern Distributed Control System (DCS) & Process Instrumentation, Cyber Security of Industrial System, DCS System (Honeywell), DCS Experion System, DCS Siemens Telepherm XP, Relay Coordination Using ETAP Software, Power System Study on ETAP, ETAP-Power System Analysis, Flow Measurement Foundation, Hydrocarbon Measurement & Sampling, Gas Dosiers Preparation, Gas/Liquid Fuel Measurement, Instrumentation Measurement & Control System, Flow Measurement, Pressure Measurement, Level & Temperature Measurement, Measurement Devices & Control System, Instrumentation & Control Systems, Control System Orientation, Uninterruptible Power Supply (UPS) Battery Charger, Industrial UPS Systems Construction & Operation, Test Lead-Acid & Ni-cad Battery Systems, Hazards & Safe Work Practices, Transformer Operational Principles, Selection & Troubleshooting; HV & LV Transformers, Control Valves & Actuators, Electrical Safety, Protection Relay Application, Maintenance & Testing, NEC (National Electrical Code), NESC (National Electrical Safety Code), Electrical Safety, Electrical Hazards Assessment, Electrical Equipment, Personal Protective Equipment, Lock-Out & Tag-Out (LOTO), Confined Workspaces, Alerting Techniques, Electrical Transient Analysis Program (ETAP), Power Quality, Power Network, Power Distribution, Distribution Systems, Power Systems Control, Power Systems Security, Power Electronics, Electrical Substations, UPS & Battery System, Earthing & Grounding, Load Forecasting, Power Generation, Protective Systems, Electrical Generators, Power & Distribution Transformers, Electrical Motors, Switchgears, Transformers, AC & DC Drives, Variable Speed Drives & Generators, Generator Protection, GE Gas Turbines, PLC, SCADA, DCS, Process Control, Control Systems & Data Communications, Instrumentation, Automation, Valve Tuning, SIS, SIL, ESD, Alarm Management Systems, Energy Management System, Engine Management System, Bearing & Rotating Machine, Fieldbus Systems and Fiber Optics Technology. He is currently the Systems Control Manager of Siemens where he is in-charge of Security & Control of Power Transmission Distribution & High Voltage Systems and he further takes part in the Load Records Evaluation & Transmission Services Pricing.

During his career life, Dr. Ahmed has been actively involved in different Power System Activities including Roles in Power System Planning, Analysis, Engineering, **HV Substation** Design, Electrical Service Pricing, Evaluations & Tariffs, Project Management, Teaching and Consulting. His vast industrial experience was honed greatly when he joined many International and National Companies such as **Siemens**, **Electricity Authority** and **ACETO** industries as the **Instrumentation & Electrical Service Project Manager**, **Instrumentation & Control Engineer**, **Fire Protection Engineer**, **Energy Management Engineer**, **Department Head**, **Assistant Professor**, **Instrumentation & Control Instructor**, **Project Coordinator**, **Project Assistant and Managing Board Member** where he focused more on dealing with Technology Transfer, System Integration Process and Improving Localization. He was further greatly involved in manufacturing some of **Power System** and **Control & Instrumentation Components** such as Series of Digital Protection **Relays**, MV **VFD**, **PLC** and **SCADA** System with intelligent features.

Dr. Ahmed is well-versed in different electrical and instrumentation fields like **ETAP**, Load Management Concepts, **PLC** Programming, Installation, Operation and Troubleshooting, **AC Drives** Theory, Application and Troubleshooting, Industrial Power Systems Analysis, AC & DC **Motors**, Electric Motor **Protection**, **DCS SCADA**, **Control** and Maintenance Techniques, Industrial Intelligent Control System, **Power Quality** Standards, Power Generators and Voltage Regulators, Circuit Breaker and Switchgear Application and Testing Techniques, **Transformer** and **Switchgear** Application, Grounding for Industrial and Commercial Assets, Power Quality and **Harmonics**, **Protective Relays** (O/C Protection, Line Differential, Bus Bar Protection and **Breaker Failure Relay**) and Project Management Basics (PMB).

Dr. Ahmed has PhD, Master's & Bachelor's degree in Electrical Engineering from the University of Wisconsin Madison, USA and Ain Shams University, respectively. Further, he is a Certified Instructor/Trainer, a Certified Internal Verifier/ Assessor/Trainer by the Institute of Leadership and Management (ILM), an active member of IEEE and ISA as well as numerous technical and scientific papers published internationally in the areas of Power Quality, Superconductive Magnetic Energy Storage, SMES role in Power Systems, Power System Blackout Analysis, and Intelligent Load Shedding Techniques for preventing Power System Blackouts, HV Substation Automation and Power System Stability.



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# Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

#### Day 1

Day I	
0730 – 0800	Registration & Coffee
0800 - 0815	Welcome & Introduction
0815 - 0830	PRE-TEST
0830 - 0900	Introduction Objectives of the Workshop • Workshop Content
0900 - 0930	<b>Fluid Mechanics</b> Terminology • Flow Profiles • The Measurement of Flow • Flowmeter Classification
0930 - 0945	Break
0945 - 1230	AccuracyPreviewBasic RequirementsResponseUncertaintyProcessSpecificationTechnical SpecificationAccuracy Specifications
1230 - 1245	Break
1245 - 1415	Flow MeasurementIndustrial Flowmeter TypesBasic Flow TheoryDifferential PressureFlowmetersOscillatory Flow MeasurementPositive Displacement MetersTurbine MetersMagnetic FlowmetersUltrasonic FlowmetersDopplerFlowmetersVortex SheddingCoriolis MetersFlowmeter Selection
1415 – 1420	Video Presentation Coriolis Mass Flowmeter
1420 - 1430	<b>Recap</b> Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day One

#### Day 2

<u> / _</u>		
0730 – 0845	Level Measurement Main Types • Buoyancy Tape Systems • Hydrostatic Pressure • Ultrasonic Measurement • Radar Measurement • Vibration Switches • Electrical Measurement • Installation Considerations • Impact on the Control Loop • The Future	
0845 - 0930	Video Presentation Radar Level Measurement	
0930 - 0945	Break	
0945 - 1030	<b>OIML Recommendation R117</b> Introduction • Scope • General Requirements • Field of Operation • Accuracy Classes • Case Example • API MPMS Chapter 5.8	
1030 - 1045	Video Presentation Ultrasonic Flowmeter	
1045- 1115	Flow CalibrationGeneral • Trends in Calibration • Types of Calibration Test Rigs • In SituCalibration • Turbine Meters • Review	



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1115–1130	Video Presentation Flow Calibration
1130 – 1230	<i>Meter Provers</i> <i>Definitions</i> • <i>Main Types</i> • <i>Maintenance</i> • <i>Problems</i>
1230 - 1245	Break
1245 - 1420	<b>Proving of a Turbine Meter</b> Interactive Video Presentation
1420 - 1430	<b>Recap</b> Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Two

#### Day 3

Day 3	
0730 - 0915	Terminal Custody TransferIntroduction • Methods of Tank Calibration • Tank Gauging TechniquesTank Management Systems
0915 - 0930	Video Presentation Tank Gauging System
0930 - 0945	Break
0945 - 1100	Lease Automatic Custody TransferIntroductionSystem RequirementsOperationEquipmentConclusionsAppendix
1100 - 1230	Truck Custody TransferIntroductionTruck TypesTypical EquipmentOther ConsiderationsPerformanceNew Developments
1230 - 1245	Break
1245 - 1420	Pipeline Meter ConsiderationsIntroduction• Flow in a Pipeline• Pipeline Installation Considerations• DPTransmitters• Multi-Port Averaging Pitot• Oscillatory Flow Measurement•Ultrasonic Flow Measurement• Mass Flow Measurement
1420 - 1430	<b>Recap</b> Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Three

# Day 4

Day 4	
0730 - 0930	<i>Leak Detection</i> <i>Introduction</i> • <i>API</i> 1130 • <i>A Theoretical or Practical Approach</i> • <i>Real Time Transient Model</i> • <i>Practical Example</i> • <i>Results</i> • <i>Conclusions</i>
0930 - 0945	Break
0945- 1100	Loss Control SystemsIntroduction • Custody Transfer Sampling • Case Studies • Examples ofDelivery Malpractice
1100 – 1230	<i>Monitoring and Controlling Production Losses</i> <i>Introduction • General • Types of Leaks • Meter Proving • Conclusions</i>
1230 – 1245	Break
1245 – 1415	Multiphase MeteringIntroduction to Multi-phase FlowmeteringPrinciples



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1415 – 1420	Video Presentation Multiphase Metering
1420 – 1430	<b>Recap</b> Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Four

# Day 5

0730 – 0930	API StandardsIntroduction• API Gravity• Classification of Grades• TemperatureMeasurement• Measuring the Suspended S & W Content• Calculating NetVolume• Conclusions
0930 - 0945	Break
0930 - 0945	Flowmeter Selection and CostsInitial Considerations• Meter Selection• Process Considerations• CostConsiderations
0945 - 1100	Case Study – Proving of LPG Meters Introduction • Properties of LPG • Equipment • Benefits
1100 – 1230	Addendums         Ultrasonic Gas Flowmeter       • Custody Transfer Contracts       • Other Subjects
1230 - 1245	Break
1245 - 1345	Review & Wrap-up Session
1345 - 1400	<i>Course Conclusion</i> Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course
1400 - 1415	POST-TEST
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course



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# Simulators (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art "Gas Ultrasonic Meter Sizing Tool", "Liquid Turbine Meter and Control Valve Sizing Tool", "Liquid Ultrasonic Meter Sizing Tool" and "Orifice Flow Calculator" simulators.

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Conditions     Fuid     Specific Gravity / Density     Vaccasity       Project Tite / Tag     Fuid List     Statute     300     Papevalue     1.1     Centralistie       Pow Rate     200     400     500     Cubic Melers     Per Hour     Importance       Pow Rate     200     400     500     Cubic Melers     Per Hour     Importance       Persaure     200     100     F     F     C       Persaure     600     100     InFer     Importance       Catern Steel Body and Flarges (45°C to 150°C)     Toroducer     Tarenducer       Nominal Line Stee     Software     Bore ID     Meler Lineasity	Fle About         Measurement Driffice         Specific Gravity         Operator       Calculated (from density)       Base         Operator       Calculated (from density)       Specific Gravity         Operator       Calculated (from density)       Density         Operator       C Superheated       C User Entered       Inches         Pipe       Nominal       2 Inches       Pipe       Donator         Options       Flow Rate       Differential Pressure       Options       Pipe         Objected       Differential Pressure       Options       Pipe Air         Objected       Differential Pressure       Options       Piersure         Options       Differential Pressure       Options       Piersure         Options       Differential Pressure       Options       Piersure         Options       Differential Pressure       Options       Piersure	
costi Condition:     Fuid     Specific Gravhy / Density     Vanceky       Project Trie / Tag     Fuid List     Goodfar     300 ling/cubic neter     1.1 Centralist       Poor Rate     200     400     800     Units     Per Hour       Poor Rate     200     600     100     1° F     FC       Pletsure     600     100     1° F     FC       Pletsure     600     100     1° F     FC       NISI Class     Farrage     International     International       form Sheet Book and Farger (46°C to 150°C)     150 NBK / PN 20     11 Centandouri       form June Size     Schedule 40     6005     nuches	Fle       About         Measurement Onlice         Specific Gravity       © User Entered         Specific Gravity       © Calculated (from density)       Base         Operating       © Superheaded (from density)       Base         Density       © Calculated (from density)       Base         Operating       © Superheaded (° User Entered       Base         Pipe       © Superheaded (° From ASME Table       Monthle         Options       © Desting       © Lipan         Options       © Differential Pressure       © Lipan         Options       © Differential Pressure       © Lipan         Options       © Differential Pressure       © Advider         Differential       © Inches Wrater       Pres         Differential       © Inches Bore Diameter       Pres         Base Ratio       Ontice Bore Diameter       Pres	
Descrit Condition:     Fuid     Specific Gravity / Density     Vaccasity       Preject Trie / Tag     Fuid Lint     Statute     300     Vaccasity     1.1     Centrative       Preject Trie / Tag     Fuid Lint     Statute     300     Vaccasity     1.1     Centrative       Preject Trie / Tag     Fuid Lint     Statute     Statute     1.1     Centrative     1.1     Centrative       Preserve     20     400     500     Cube Means     Per     Per     Per       Preserve     600     100     r.7     r.0	Fle About         Measurement Onlice         Specific Gravity         Clouded (from density)       Base         Specific Gravity       Clouded (from density)       Base         Operating       Clouded (from density)       Base         Prove Clouded (from density)       Clouded (from density)       Clouded (from density)       Clouded (from density)         Poerating       Prove Type         Nominal 2       Inches       Poer Minute       Inches         Options       Prove Type         Options       Prove Type         Differential Pressure       Inches       Prove Type         Differential Pressure       Prove Type	
Peiged Title / Tag       Puid List       State State       300       lig/cubic meter       1.1       Certificitie III         Plow Rise       200       400       500       Cubic Meters       IP Re       Port Hour         Temperature       20       600       100       17       F C         Pessure       60       100       IP Re       IIII       Persite IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Fle       About         Measurement Onlice         Specific Gravity       © User Entered         Specific Gravity       © Calculated (from density)       Base         Operating       © Superheaded (from density)       Base         Density       © Calculated (from density)       Base         Operating       © Superheaded (° User Entered       Base         Pipe       © Superheaded (° From ASME Table       Monthle         Options       © Desting       © Lipan         Options       © Differential Pressure       © Lipan         Options       © Differential Pressure       © Lipan         Options       © Differential Pressure       © Advider         Differential       © Inches Wrater       Pres         Differential       © Inches Bore Diameter       Pres         Base Ratio       Ontice Bore Diameter       Pres	
costi Condition:     Fuid     Specific Gravhy / Density     Vanceky       Project Trie / Tag     Fuid List     Goodfar     300 ling/cubic neter     1.1 Centralise       Poor Rate     200     400     800     Units     Per Hour       Poor Rate     200     600     100     1° F     FC       Pletsure     600     100     1° F     FC       Pletsure     600     100     1° F     FC       NISI Class     Farrage     International     International       form Sheet Book and Farger (46°C to 150°C)     150 NBK / PN 20     11 Centandouri       form June Size     Schedule 40     6005     nuches	Fle       About         Measurement Onlice         Specific Gravity       © User Entered         Specific Gravity       © Calculated (from density)       Base         Operating       © Superheaded (from density)       Base         Density       © Calculated (from density)       Base         Operating       © Superheaded (° User Entered       Base         Pipe       © Superheaded (° From ASME Table       Monthle         Options       © Desting       © Lipan         Options       © Differential Pressure       © Lipan         Options       © Differential Pressure       © Lipan         Options       © Differential Pressure       © Advider         Differential       © Inches Wrater       Pres         Differential       © Inches Bore Diameter       Pres         Base Ratio       Ontice Bore Diameter       Pres	
const Condition:     Fuid     Special Gravity / Density     Vancesky       Project Trie / Tag     Fuid List     Generation     300     ling/cubic neter     1.1     Centralist       Poor Rate     200     400     800     Cable Mers:     Per Hour     Image: Cable Mers:     Per Hour       Pressure     20     60     100     1° F     F*C       Pressure     60     100     16° Per     Image: Cable Mers:     Per Hour       detried     ANS Class:     Barge: Transdoort       cators Seet Body and Flanger:     46° Cit 190°Cit 101°Cit Mersdoort (50° Cit 101°C)     Mersdoort       cators Seet Body and Flanger:     46° Cit 190°Cit 101°Cit Mersdoort (50° Cit 101°C)     Mersdoort       cators Seet Body and Flanger:     46° Cit 190°Cit 100°Cit 100°Cit Mersdoort     Transdoort       cators Seet Body and Flanger:     46° Cit 190°Cit 100°Cit 100°Cit Mersdoort     Transdoort       cators Seet Body and Flanger:     46° Cit 190°Cit 100°Cit 100°Cit Mersdoort     Transdoort       commal Line Scine     Schedule:     6005     Inches:     5015%       Cators Seet Body and Flanger:     Schedule:     6005     Inches:     5015%       Cators Seet Body and Flanger:     Schedule:     6005     Inches:     5015%	Fle       About         Specific Gravity       Flowing         Specific Gravity       Caculated (tron density)         Density       Caculated (tron density)         Density       Caculated (tron density)         Density       Caculated (tron density)         Density       C Superheated         Pipe       Specific Gravity         Normal       Pipe         Density       C Superheated         Pipe       Flow Rate         Discuster       Pipe         Datavalate       Differential Pressure	
Descrit Condition:     Fuid     Special: Starkly / Density     Vaccaby       Project Title / Tag     Fuid List     Starting     300     Foglocitic meter     1.1     Centralist       Power Rate     200     400     500     Cable     Per     Four     Image: Starting in the st	Fle       About         Measurement Onlice         Specific Gravity       © User Entered         Specific Gravity       © Calculated (from density)       Base         Operating       © Superheaded (from density)       Base         Density       © Calculated (from density)       Base         Operating       © Superheaded (° User Entered       Base         Pipe       © Superheaded (° From ASME Table       Monthle         Options       © Desting       © Lipan         Options       © Differential Pressure       © Lipan         Options       © Differential Pressure       © Lipan         Options       © Differential Pressure       © Advider         Differential       © Inches Wrater       Pres         Differential       © Inches Bore Diameter       Pres         Base Ratio       Ontice Bore Diameter       Pres	

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