

# Cold Water Rheology Kit

## Instruction Manual



Manual No. 372144, Revision E  
Instrument No. 207952 or 207953

**fann**<sup>®</sup>

Fann Instrument Company

## Cold Water Rheology Kit Instruction Manual

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Houston, Texas, USA

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## **Table of Contents**

1	Introduction.....	4
1.1	Document Conventions.....	5
2	Safety .....	6
3	Features and Specifications .....	7
4	Equipment Setup .....	9
5	Operation.....	10
6	Troubleshooting and Maintenance .....	11
7	Parts List.....	12
8	Warranty and Returns .....	13
8.1	Warranty.....	13
8.2	Returns.....	13

## **List of Figures**

Figure 3-1 Cold Water Rheology Kit .....	8
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## **List of Tables**

Table 3-1 Specifications.....	7
Table 7-1 Cold Water Rheology Kit, P/N 207952, 115 VAC, Revision C.....	12
Table 7-2 Cold Water Rheology Kit, P/N 207953, 230 VAC, Revision D.....	12

## **1 Introduction**

The Cold Water Rheology Kit is an accessory for the Fann Model 35 Viscometer. Operators use this kit with the Model 35 when measuring rheological properties of drilling fluids at temperatures less than 70°F (21.1°C). The kit contains the following items:

- Digital circulating bath
- Double-walled sample cup and insulating jacket
- Measuring cup, 500 ml
- Plastic funnel
- Propylene glycol, 32 oz
- Distilled water, 1 gal
- PVC tubing
- Rubber tube insulation
- Plastic storage bottle, 1 gal (for cooling mixture storage)
- Polyethylene case (for kit storage)

Fann offers two versions of this kit:

- Kit P/N 207952, 115 VAC
- Kit P/N 207953, 230 VAC

This instruction manual is written for both kits.

## 1.1 Document Conventions

The following icons are used in this manual to distinguish elements of text.



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Notes emphasize additional information that may be useful to the reader.

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Caution messages give directions that, if not observed, could result in loss of data or in damage to equipment.

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**Describes an unsafe condition or practice that if not corrected, will result in personal injury, possibly death.**

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## **2 Safety**

Follow appropriate safety measures and wear proper personal protective equipment (PPE), especially hand protection. Be aware of exposure to temperature extremes.

Please make sure that the power available matches the voltage labeled on the circulating bath. Both the units will operate on either 50 or 60 hertz, but the voltage must be correct- 110 to 120 VAC for the kit P/N 207952 and 220 to 240 VAC for the kit P/N 207876.

Make sure that the bath is unplugged before filling or emptying.

This kit includes propylene glycol. Review its Material Safety Data Sheet (MSDS) for appropriate clean up and disposal methods.

### 3 Features and Specifications

The Cold Water Rheology Kit is compact and portable. Its components are contained in a durable carrying case.

This kit includes a digital circulating bath and a double-walled sample cup. To maintain the temperature, insulating material is also included to cover the cup and the tubing through which the cooling mixture flows. The digital circulating bath features controlled cooling and programmable settings.

**Table 3-1 Specifications**

Category	Specification
Bath capacity	6 liters
Temperature range	- 20 to 100°C - 4 to 212°F
Bath Dimensions (Width x Height x Length)	8 x 24.2 x 16.3 inches 20.3 x 61.5 x 41.4 centimeters
Flow rate, maximum	15 L/min
Cooling Capacity	250 W
Heater Wattage	1000 W (P/N 207952) 1200 W (P/N 207953)
Power	115 V, 50/60 Hz, 15 Amps (P/N 207952) 230 V, 50/60 Hz, 10 Amps (P/N 207953)



**Figure 3-1 Cold Water Rheology Kit**



## **4 Equipment Setup**

Set up the bath on a stable surface away from flammable or combustible materials.

Connect the tubing on the circulating bath to the insulated cup. The bath has labeled connections – *in* and *out*. The quick disconnects ensure proper connection. Be certain that the tubing and cup are always covered with the insulating material.

Make certain that the Model 35 operates properly with the insulated cup in place.



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Each unit uses 50/60 Hz. Make sure that the unit –115 or 230 VAC is rated for the power source.

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## **5 Operation**

Refer to the manufacturer's instruction manual for operating the circulating bath. It provides detailed instructions, such as initiating cool down and caring for the unit.

It takes the bath system approximately 30-45 minutes to take the sample below freezing.

It is recommended that the sample be stirred at 100 RPM while cooling so that the temperature is constant throughout the sample volume. The temperature in the bath reservoir is not the same as the sample temperature; it may be two or more degrees colder.

For accurate temperature measurements, use a thermometer. You may order a thermometer separately. Fann offers three thermometers for use with this kit:

- Glass thermometer, degrees Fahrenheit, P/N 206040
- Glass thermometer, degrees Celsius, P/N 206041
- Digital thermometer, P/N 206044

Please empty the bath reservoir before moving the bath. Some units do not have a drain; use a cup to remove the coolant.

The coolant make-up is approximately 50% propylene glycol and 50% distilled water. Store this mixture in a closed container or the plastic bottle that comes with the kit.

Automotive coolant is NOT recommended because it puts undue wear on the circulating pump.

Follow the manufacturer's instructions for cleaning and drying the bath.



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**Propylene glycol is a toxic alcohol. Please review the MSDS for propylene glycol for safe handling, storage, and disposal.**

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## **6 Troubleshooting and Maintenance**

The following list includes basic care and cleaning instructions. Please refer to the bath manufacturer's manual for comprehensive instructions.

- Clean and dry the bath according the manufacturer's instructions.
- Properly clean the strainer and screen filter after use.
- If the sample is not cooling in a reasonable amount of time, the pump screen may be blocked and/or the coolant may need to be replaced.
- If the bath is making loud noises, the pump strainer is probably clogged. See the manufacturer's manual for pump care and maintenance.
- Periodically replace the cooling mixture. Over time, it will lose its cooling capacity.

## 7 Parts List

**Table 7-1 Cold Water Rheology Kit, P/N 207952, 115 VAC, Revision C**

Item No.	Part No.	Quantity	Description
0001	101791070	8	HOSE CLAMP, 7/32 TO 5/8 INCHES
0002	207958	1	CUP, DOUBLE-WALL CIRCULATING
0003	102142309	2	PROPYLENE GLYCOL, 32 oz
0004	209947	1	DISTILLED WATER, 1gal
0005	204076	6	INSULATION, RUBBER TUBE 3/8 in ID
0006	102051795	6	TUBING, PVC, REINFORCED, 8mm ID X 13.5mm OD, 250 PSI, -25 TO 150 F
0007	208755	1	DIGITAL WATER BATH, CIRCULATING, 115 VAC
0008	206893	1	MEASURING CUP, 500 ml, STAINLESS STEEL
0009	203633	1	CASE, POLYETHYLENE, 25 X 23 X 14
0010	205952	1	PLASTIC WHITE BOTTLE, 1gal
0011	207950	1	INSULATION JACKET, DOUBLE-WALL CUP
0012	204101	2	QUICK DISCONNECT FITTING, FEMALE COUPLING
0013	204102	2	QUICK DISCONNECT FITTING, MALE INSERT
0014	203634	1	INSERT SET, COLDWATER RHEOLOGY CASE
0015	206049	1	SPONGE, CELLULOSE 5 X 3-1/2 X 1
0016	205904	1	PLASTIC FUNNEL, 3 inches
0017	372144	1	INSTRUCTION MANUAL

**Table 7-2 Cold Water Rheology Kit, P/N 207953, 230 VAC, Revision D**

Item No.	Part No.	Quantity	Description
0001	101791070	8	HOSE CLAMP, 7/32 TO 5/8 INCHES
0002	207958	1	CUP, DOUBLE-WALL CIRCULATING
0003	102142309	2	PROPYLENE GLYCOL, 32 oz
0004	209947	1	DISTILLED WATER, 1gal
0005	204076	6	INSULATION, RUBBER TUBE 3/8 in ID
0006	102051795	6	TUBING, PVC, REINFORCED, 8mm ID X 13.5mm OD, 250 PSI, -25 TO 150 F
0007	208756	1	DIGITAL WATER BATH, CIRCULATING, 230 VAC
0008	206893	1	MEASURING CUP, 500 ml, STAINLESS STEEL
0009	203633	1	CASE, POLYETHYLENE, 25 X 23 X 14
0010	205952	1	PLASTIC WHITE BOTTLE, 1gal
0011	207950	1	INSULATION JACKET, DOUBLE-WALL CUP
0012	204101	2	QUICK DISCONNECT FITTING, FEMALE COUPLING
0013	204102	2	QUICK DISCONNECT FITTING, MALE INSERT
0014	203634	1	INSERT SET, COLDWATER RHEOLOGY CASE
0015	206049	1	SPONGE, CELLULOSE 5 X 3-1/2 X 1
0016	205904	1	PLASTIC FUNNEL, 3 inches
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## **8 Warranty and Returns**

### **8.1 Warranty**

Fann Instrument Company warrants its products to be free from defects in material and workmanship for a period of 12 months from the time of shipment. If repair or adjustment is necessary, and has not been the result of abuse or misuse within the twelve-month period, please return, freight prepaid, and correction of the defect will be made without charge.

Out of warranty products will be repaired for a nominal charge.

Please refer to the accompanying warranty statement enclosed with the product.

### **8.2 Returns**

For your protection, items being returned must be carefully packed to prevent damage in shipment and insured against possible damage or loss. Fann will not be responsible for damage resulting from careless or insufficient packing.

Before returning items for any reason, authorization must be obtained from Fann Instrument Company. When applying for authorization, please include information regarding the reason the items are to be returned.

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