

# OPERATING, INSTALLATION & MAINTENANCE MANUAL

FOR

**PR-23, PR-53 & PR-103 SAMPLE RECEIVERS**

**HIGH PRESSURE VERSION**

*This JISKOOT Product is designed to provide outstanding service if correctly installed, used and maintained recognising the effects of the process conditions (temperature, pressure, wax/pour point, sediment, etc.).*

*Truly representative sampling of crude oils etc., cannot be achieved by one single product in isolation. A well designed system and operating procedures as laid down in the Sampling Standards ISO 3171, API 8.2 and IP Chapter VI section 2 are mandatory.*

*Please consult JISKOOT for further information and assistance.*



## TABLE OF CONTENTS

1	INTRODUCTION.....	2
2	OPERATING INSTRUCTIONS.....	2
3	FULL FUNCTIONAL DESCRIPTION.....	2
4	INSTALLATION DETAILS.....	3
5	MAINTENANCE AND TROUBLESHOOTING.....	3
6	FREQUENTLY ASKED QUESTIONS.....	4
7	RECOMMENDED SPARES LIST .....	4
8	DISCLAIMER.....	4

# 1 Introduction

The PR-SPECIAL Series Sample Receivers are portable sample receivers designed for the collection and handling of low pressure crude oil and refined product samples.

The PR-Series Sample Receivers are available in 3 capacities:

- PR-23 9 Litres
- PR-53 18 Litre
- PR-10335 Litres

Designed to minimise contamination and loss of light ends, the Sample Receivers are connected directly to the Sampling System during sample collection, and to the Laboratory Mixing Facility prior to analysis.

The Sample Receiver is fitted with a safety relief valve to protect against overpressure when in transit, primarily from thermal expansion of the gaseous phase of the sample.

# 2 Operating Instructions

## ***Health and Safety Precautions:***

***The PR-Series Sample Receivers may be used in applications involving carcinogenic or other hazardous products. Care must be taken to avoid contamination by any product released when making or breaking the quick connect couplings. It is recommended that an absorbent cloth be placed around the coupling to collect the small amount of product will be released when operating the couplings.***

***The PR-103 Sample Receiver weighs approximately 50kg (110lb) when full, the PR-53 Sample Receiver weighs approximately 25kg (50lb) and the PR-23 - 18kg (36lb). Due care must be taken during lifting, handling and transportation operations to avoid damage or injury to personnel and equipment.***

Immediately prior to use, the Sample Receiver should be checked to ensure that it is clean and dry and that the 'O' Ring is in good condition. The lid should be fitted ensuring the 'O' Ring is locating correctly between the Receiver and lid.

Connect the Sample Receiver to the Sampling System using the 3/4" male quick connect coupling and place the Sample Receiver on the bracket on the Support Panel. The Sample Receiver is now ready to receive samples.

When used with the Laboratory Mixing Facility, the Mixing Pump suction hose should be connected to the 3/4" male quick connect coupling and the return hose to the 1/2" connector.

The mixer should be used in accordance with the manufacturers' instructions.

# 3 Full Functional Description

The Receiver body, relief valve and quick release lid are generally constructed from stainless steel, the internal inlet and outlet tubing and the pressure gauge from 316 stainless steel and the quick connect couplings are manufactured from 303 stainless steel. Sample Receivers may be supplied in 316 stainless steel as a cost-extra option if specified at order placement.

The Sample Receivers are rated for maximum operating pressure of 150 PSIG, and are pressure tested during manufacture to 190 PSIG. A safety relief valve is fitted to the top of the receiver, normally set to open at 150 PSIG, but, where requested at the time of manufacture, may have been set to a higher pressure as indicated on the equipment label.

The Sample Receiver is filled via the 3/4" ISO standard male quick connect coupling, and when used in conjunction with a laboratory mixer prior to sample analysis, the mixer suction will be connected to the 3/4" coupling, and the return to the 1/2". The 1/2" connection incorporates a mixing device, to help to ensure that any solids collected at the bottom of the Receiver are thoroughly mixed into the sample to provide a fully representative sub-sample of the product.

There are isolation valves on the 3/4" and 1/2" connections to allow the receiver to be disconnected and connected easily and safely.

To adjust the pressure relief valve, remove the deflector cap (unscrew pulling ring). Then loosen the small locking nut and adjust the 3 sided spring retainer counter to decrease setting. Test setting and recheck. Then reassemble.

## **4 Installation Details**

The Sample Receivers are placed on the can platforms in the Receiver Cabinet. All piping should slope downwards from the sampling device to the Sample Receivers to ensure that there is no dropout of water before it enters the Receiver. The final connections should be utilise flexible hoses and a 3/4" ISO standard quick release coupling and then open the isolation valve.

## **5 Maintenance and Troubleshooting**

To avoid cross contamination of samples, it is essential that the Sample Receiver is thoroughly cleaned and dried after use. Solvents such as toluene should be used to remove all traces of the previous sample.

*Note: The use of some solvents may cause the scale of the pressure gauge to become obscured. This will have no effect on the operation of the Sample Receiver, but it may be advisable to use an alternative solvent cleaning agent.*

The condition of the 'O' Ring sealing the lid should be checked regularly, to ensure that it is not damaged, as this may allow the light ends in the sample to vent to atmosphere.

In the event of damage or leakage, the quick release couplings may be removed and replaced, or overhauled to replace any damaged 'O' Rings.

It is recommended that the operation of the pressure relief valve be checked on an annual basis, to ensure that it is providing a tight shut off, and operates at the correct pressure. While we would not recommend that it be held under calibration control, we would caution that the set point tolerance is significantly less relevant than the fact that it will mechanically function within the 1-2 bar band.

The absolute setting of the relief valve and the function thereof is of little criticality unless the vessel has been filled with a straight liquid phase i.e. non-compressible and then it is subject to a thermal rise. Since the setting of the device is non-critical we would suggest that if a functional test is to be performed, this be restricted to venting the relief when the sample has been withdrawn to prove that it is not "stuck".

In the event that the relief valve fails to give a tight shut off, replace the 'O' Ring.

## 6 Frequently Asked Questions

In the event of the Sample Receiver not holding pressure, check the condition of the 'O' Ring in the lid, and ensure that the lid is properly located in the retaining ring at the top of the receiver. If necessary, apply air pressure of approximately 0.5 Bar to the Sample Receiver and check for leaks with a proprietary leak detector.

## 7 Recommended Spares List

Part/Sub- Assembly	Stock No's	Commissioning	1 Year Operation	2 Year Operation
Lid 'O' Ring	37-0046-00	1	3	3

## 8 Disclaimer

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**Notes**





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