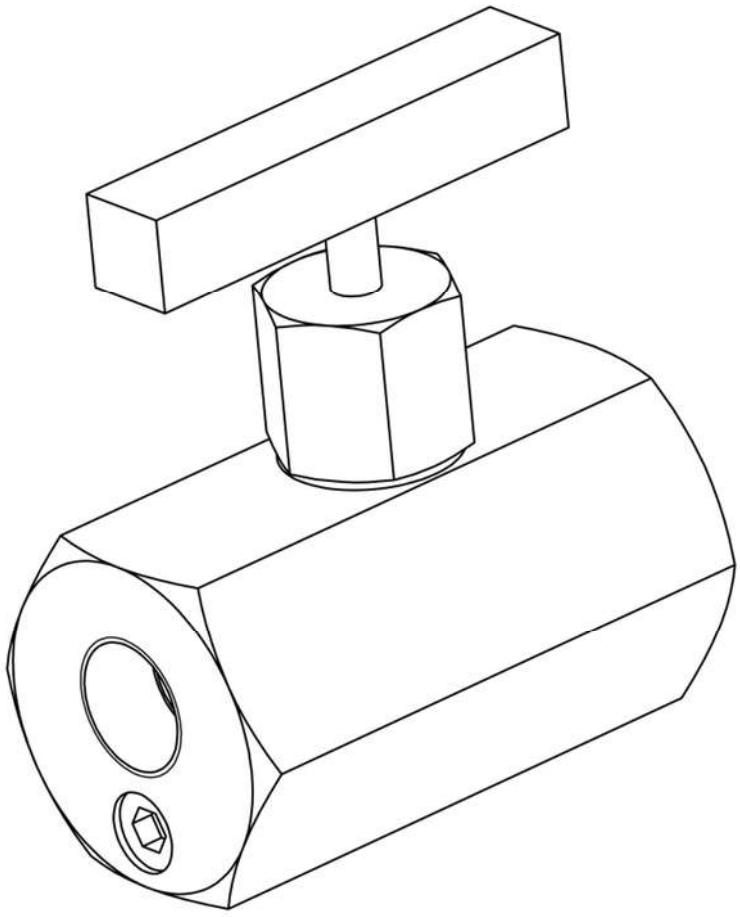
Operating Instruction Manual: OM-HFV66-01	From Serial Number: ALL

This 'original instructions' document assumes that the operator carrying out any operation with this product is trained and competent to do so. This manual does not attempt to cover all details or variations in the equipment. Nor does this manual claim to provide for every possible contingency met in connection with the installation, operation, or maintenance thereof. Should further information be desired, or should a particular problem arise which is not covered in sufficient detail, the matter should be referred to Hi-Force.

OPERATING INSTRUCTION MANUAL

HFV66 | MANUAL CHECK VALVE



Hi-Force HFV66 control valves are designed to provide precise control of the hydraulic system flow during load lowering. The HFV66 Manual check valve features a pressure relief valve that is factory set to 800-850 BAR (11600-12300 PSI) to prevent cylinder overload.

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1.0 Inspection upon Receipt

Upon receipt of the product, visually inspect the item for any evidence of shipping damage. Please note: the warranty does not cover shipping damage. Notify the courier immediately if shipping damage is found and refrain from putting the product into service. The carrier is responsible for repair and replacement costs resulting from damage that occurred in transit.

NOTE: Images contained within this document are for illustrative purposes **ONLY**.

2.0 Safety Precautions

2.1 Introduction

Read and follow all the instructions and safety warnings carefully before handling, installation, or use of any hydraulic equipment. Failure to do so could lead to equipment damage, equipment failure, personal injury or even death. Hi-Force will not be held responsible for any damage to the equipment, injury or death resulting from the unsafe use of, lack of maintenance to, or incorrect operation of the product. If in doubt on the correct use of any Hi-Force equipment, contact your nearest Hi-Force office or distributor. Only qualified personnel should be allowed to operate hydraulic equipment. If an operator has not been trained on high-pressure hydraulic equipment and its safe usage, consult your local Hi-Force sales office or distributor who can offer training courses for operators.

2.2 Work Area Safety

- Keep work areas clean and well lit. Cluttered spaces and inadequate lighting can result in unnecessary accidents.
- Keep unauthorised persons at a safe distance from the task site.
- **NEVER** use the tools in the presence of inflammable liquids, gases, or material.
- **DO NOT** use the tools in potentially explosive atmospheres (ATEX) this tool is **NOT** ATEX approved.

2.3 General Hydraulic System Safety Precautions

⚠ WARNING! Failure to observe and obey the following safety precautions could result in property damage, significant personal injury or death;



- When operating any hydraulic equipment, all operators should ensure that all necessary personal protective equipment (PPE) is worn, as specified by their employer. Steel toe-cap safety shoes, safety glasses/visor, ear protection and protective gloves should be always worn. All relevant risk assessments should be completed before the use of the equipment.
- Keep hydraulic equipment away from open flames and direct heat.
- **NEVER** handle a pressurised hydraulic hose. Hydraulic oil escaping under pressure from a ruptured hose can penetrate the skin and lead to a significant medical emergency, and in some cases, death. Should this incident occur, seek out medical attention immediately.
- Inspect hoses regularly for damage and wear.
- Seek medical attention immediately if a hydraulic injection injury (no matter how minor) occurs.
- The system operating pressure **MUST NOT** exceed the pressure rating of the lowest-rated component in the system. It is good practice to use a pressure gauge to monitor the entire system.
- Only use hydraulic tools/cylinders in a complete and tested, coupled system. **NEVER** attempt to use a tool/cylinder that is not correctly coupled to its operational pump. **NEVER** pressurise an uncoupled male coupler/s.

- **NEVER** attempt to disconnect a hose from a hydraulic system until the systems pressure has been completely released. Doing so can result in that pressure becoming trapped within the system and relieving trapped pressure can be dangerous.
- **NEVER** try to relieve trapped hydraulic pressure in the system by loosening or attempting to remove the coupler. Trapped hydraulic pressure can cause a loosened coupler to dislodge unexpectedly with great force. This action could result in serious personal injury or death, as the coupler could become a projectile and hit operatives in the working area.
- **NEVER** attempt to connect or disconnect, hydraulic equipment while the system is under pressure.
- Loosening a coupler under pressure can result in the escape of hydraulic oil at high pressure, which can penetrate the skin and cause significant injury or death.
- **NEVER** use a hammer and punch to unseat a coupler check valve that is under pressure. Doing so could result in the sudden, uncontrolled release of hydraulic oil at high pressure, which could cause significant injury or death.
- Immediately replace any worn or damaged parts using genuine Hi-Force parts only.
- **DO NOT** remove any labels from the product. Replace any damaged or unreadable label immediately.
- **DO NOT** use any hydraulic equipment if you are under the influence of alcohol, drugs or medication. Lack of attention whilst operating high-pressure hydraulic tools can result in personal injury or death.
- **NEVER** over-stroke a cylinder that is not fitted with a piston stop ring. Equipment failure and injury can occur. For cylinder safety guidelines and operation refer to the cylinder operating instructions.

⚠ CAUTION! **Failure to observe and obey the following safety precautions could result in property damage, equipment damage or minor/moderate personal injury;**

- **NEVER** lift or carry any hydraulic components by the hose or hoses connected to them.
- Avoid damaging hydraulic hose. **ALWAYS** route hoses to ensure that they are free from sharp bends and kinks. Using a bent or kinked hose will result in severe back-pressure, which can lead to hose failure.
- **ALWAYS** operate the system under no-load conditions before the actual operation, to ensure there is no air trapped in the hydraulic circuit.
- **NEVER** use a coupler/s to lift, carry or position a tool.
- Ensure that the lifting device/s are placed entirely under the load and that lifting is parallel.
- Servicing of hydraulic equipment must only be undertaken by a qualified technician.



- **DO NOT** drop or place heavy objects on a hydraulic hose, as this may cause internal damage, which could result in rupture of the pressurised hose. A ruptured hose could cause significant damage to components and possible severe injury to personal operating nearby.

- The manufacturer rated load capacity and stroke length for cylinders represent the maximum safe limits. Good practice uses 80% of the rated figures, as the maximum values for load capacity and stroke length.

- Select cylinders with sufficient over-capacity. See the guidance above.

  For multi-cylinder lifting operations, 50% of the total number of cylinders used should be able to withstand the full weight of the load being lifted / lowered. I.e., The system capacity should be at least twice that of the load being lifted / lowered.

- **DO NOT** let familiarity gained with any hydraulic tools allow you to become complacent. Complacency with any tooling can result in a lack of discipline toward working guidelines and safety principles.

- loose clothing and jewellery that could get caught in moving parts, tie back long hair.

2.4 Manual Check Valve Specific Safety Precautions

⚠ WARNING! Failure to observe and obey the following safety precautions could result in property damage, serious personal injury or death;

- **Warning:** The relief valve vents to atmosphere.

- **NEVER** exceed the maximum rated capacity of any hydraulic cylinder/tool/valve. Hi-Force manufactures its hydraulic pumps to operate at a maximum working pressure of 700 BAR (10,000 PSI). **DO NOT** connect a cylinder/tool/valve with a lower pressure capacity rating to any Hi-Force pump of this model series.

- **Ensure** that any Hi-Force hydraulic hoses are correctly fitted to the HFV66 manual check valve. All ports are 3/8” NPT.

- **DO NOT** weld any items to the valve or modify it in any way from its delivered condition. Your warranty may be invalidated, and it could lead to serious personal injury.

- **NEVER** leave a pressurised system unattended. If you must leave the area, release the pressure, and ensure the hydraulic release valve on the pump unit if fully open.

⚠ CAUTION! Failure to observe and obey the following safety precautions could result in property damage, equipment damage or minor/moderate personal injury.

3.0 Declaration of Incorporation / Conformity

Hi-Force declares that this product has been tested and complies with the standards set out in the relevant EU directives. The EU Declaration of Incorporation / Conformity is included as Annex A to this instruction document and is supplied with all shipments of this product.

4.0 Component Identification

1	Control Handle	-	
2	Cylinder Connection	-	
3	Pump Connection	-	
4	Hexagon Plug	-	
-		-	
-		-	
-		-	

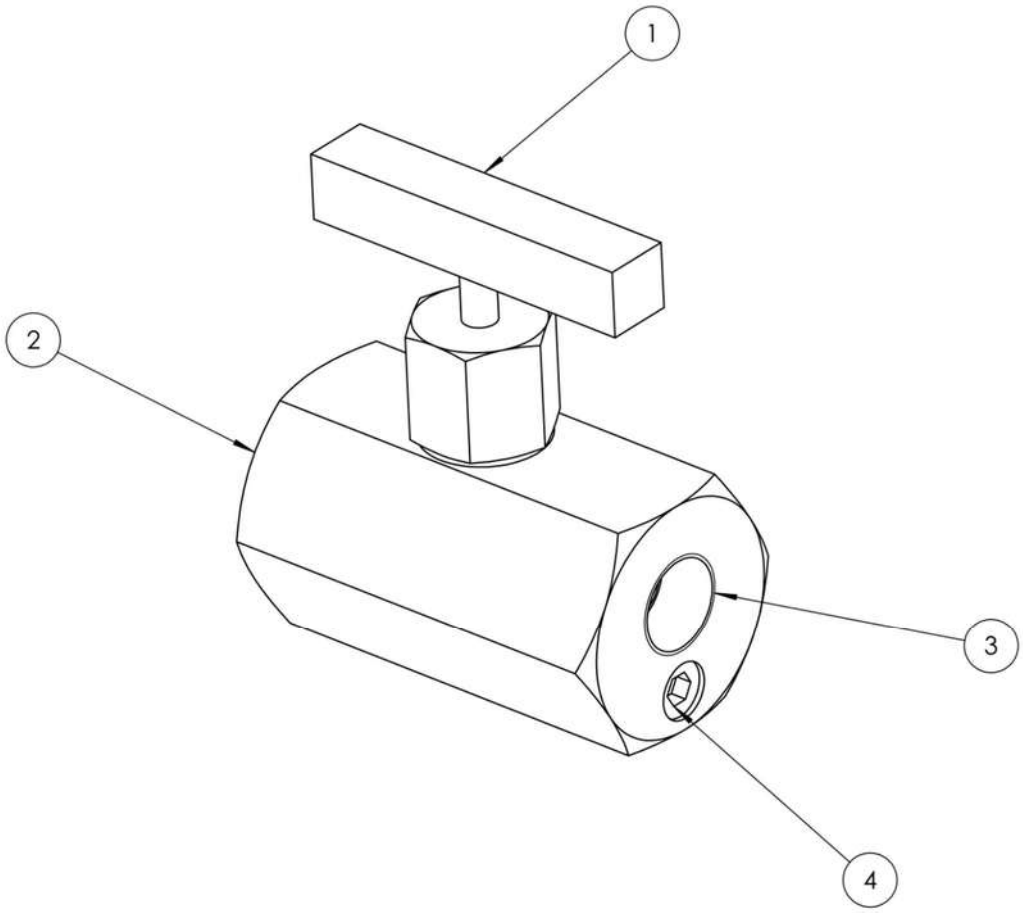


Figure 4.1: Component Identification

5.0 Setup and Operation

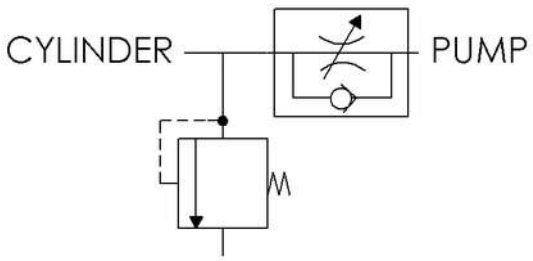
1. Apply suitable liquid thread sealant and ensure connections are correctly tightened before use. Connect valve between pump and cylinder. Ensure that the valve is the correct way round. Hexagon plug must be towards pump. (See figure 4.1).

2. Ensure that the manual valve is in the fully closed (clockwise) position. In this position the valve will allow free flow from the pump to the cylinder but will automatically lock the cylinder in the advanced position.

3. To allow retraction of the cylinder, open the manual valve by turning the control knob anti-clockwise. The rate of oil flow can be controlled by the degree of opening of the valve.

NOTE: WHEN USING HFV66 VALVE WITH DOUBLE ACTING CYLINDERS THE VALVE SHOULD NOT BE FULLY CLOSED WHEN PRESSURISING THE OPPOSITE PORT.

6.0 System Diagram of HFV66



7.0 Troubleshooting

Hi-Force HFV66 Manual check valve should be serviced and repaired only by authorised Hi-Force repair centres. The following table gives possible causes and solutions for common problems.

TROUBLESHOOTING GUIDE		
Problem	**Possible Cause**	**Solution**
Piston will not return.	Control handle closed.	Open handle.
Piston will not advance.	HFV66 valve fitted incorrectly (wrong way around).	Change HFV66 orientation. See figure 4.1 or system diagram.
Piston returning on the opening of the pump release valve.	Control handles open.	Close handle.
	Ball seat fault.	Contact your local Hi-Force office/distributor.
	Control handle seat fault.	Contact your local Hi-Force office/distributor.
Hydraulic oil escaping from the relief valve.	Overloading of valve.	Reduce load.
	Relief valve set incorrectly.	Contact your local Hi-Force office/distributor.
	Relief valve fault.	Contact your local Hi-Force office/distributor.

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