

Medium Pressure Filter Pi 344

Nominal pressure 315 bar (4480 psi), nominal size 700 + 1000

1. Features

High performance filters for modern hydraulic systems

- Designed for control block mounting
- Modular system
- Compact design
- Minimal pressure drop through optimal flow design
- Visual/electrical/electronic maintenance indicator
- Equipped with highly efficient glass fibre PS filter elements
- Beta rated elements according to ISO 16889 multipass test
- Elements with high differential pressure stability and dirt holding capacity
- Worldwide distribution

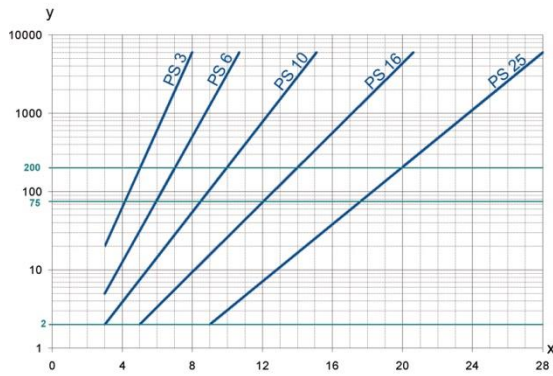


2. Flow rate/pressure drop curve (filter housing incl. element)

 190 mm²/s
 33 mm²/s

(on request)

3. Separation grade characteristics



y = beta-value
x = particle size [µm]

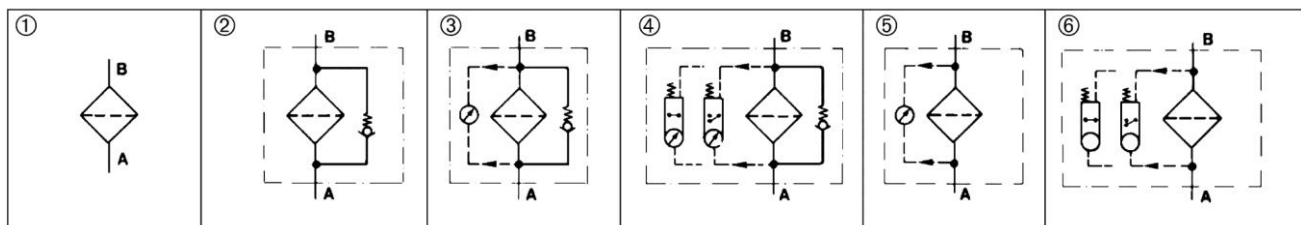
determined by multipass tests (ISO 16889)
calibration according to ISO 11171 (NIST)

5. Quality assurance

Filtration Group filters and filter elements are produced according to the following international standards:

Norm	Designation
DIN ISO 2941	Hydraulic fluid power filter elements; verification of collapse/burst resistance
DIN ISO 2942	Hydraulic fluid power filter elements; verification of fabrication integrity
DIN ISO 2943	Hydraulic fluid power filter elements; verification of material compatibility with fluids
DIN ISO 3723	Hydraulic fluid power filter elements; method for end load test
DIN ISO 3724	Hydraulic fluid power filter elements; verification flow fatigue characteristics
ISO 3968	Hydraulic fluid power filters; evaluation of pressure drop versus flow characteristics
ISO 10771.1	Fatigue pressure testing of metal containing envelopes in hydraulic fluid applications
ISO 16889	Hydraulic fluid power filters; multipass method for evaluation filtration performance of a filter element

6. Symbols



4. Filter performance data

tested according to ISO 16889 (multipass test)

PS elements with
max. Δp 20 bar

PS	3	$\beta_{5(C)} \geq 200$
PS	6	$\beta_{7(C)} \geq 200$
PS	10	$\beta_{10(C)} \geq 200$
PS	25	$\beta_{20(C)} \geq 200$

values guaranteed up to
10 bar differential pressure

PS vst elements with
max. Δp 210 bar

PS	3	$\beta_{5(C)} \geq 200$
PS	6	$\beta_{7(C)} \geq 200$
PS	10	$\beta_{10(C)} \geq 200$
PS	25	$\beta_{20(C)} \geq 200$

values guaranteed up to
20 bar differential pressure

7. Order numbers

Example for ordering filters:

1. Housing design	2. Filter elements
V = 700 l/min, electrical maintenance indicator Type: Pi 344070-015 Order number: 72481957	PS vst 3 Type: Pi 21070 BN PS vst 3 Order number: 72479331

7.1 Housing design								
Nominal size NG [l/min]	Order number	Type	① with indicator cavity	② with bypass valve and indicator cavity	③ with bypass valve and visual indicator	④ with bypass valve and electrical indicator	⑤ with visual indicator	⑥ with electrical indicator
700	72481957	Pi 344070-010						
	72481958	Pi 344070-011						
	72481959	Pi 344070-012						
	72481960	Pi 344070-013						
	72481961	Pi 344070-014						
	72481962	Pi 344070-015						
700	72481964	Pi 344100-010						
	72481965	Pi 344100-011						
	72481966	Pi 344100-012						
	72481967	Pi 344100-013						
	72481968	Pi 344100-014						
	72481968	Pi 344100-015						

When filter with non bypass configuration is selected, the collapse pressure of the element must not be exceeded.

7.2 Filter elements (a wider range of element types is available on request)					
Nominal size NG [l/min]	Order number	Type	Filter material	max. Δp [bar]	Filter surface [cm ²]
700	72479331	Pi 21070 BN PS 3	PS 3	20	7772
	72479332	Pi 22070 BN PS 6	PS 6		7772
	72479333	Pi 23070 BN PS 10	PS 10		7434
	72479334	Pi 25070 BN PS 25	PS 25		7434
	72479335	Pi 71070 BN PS vst 3	PS vst 3	210	7656
	72479336	Pi 72070 BN PS vst 6	PS vst 6		7656
	72473878	Pi 73070 BN PS vst 10	PS vst 10		7656
	72479337	Pi 75070 BN PS vst 25	PS vst 25		7656
1000	72479338	Pi 21100 BN PS 3	PS 3	20	11239
	72479339	Pi 22100 BN PS 6	PS 6		11239
	72479340	Pi 23100 BN PS 10	PS 10		10750
	72479341	Pi 25100 BN PS 25	PS 25		10750
	72479342	Pi 71100 BN PS vst 3	PS vst 3	210	11071
	72479343	Pi 72100 BN PS vst 6	PS vst 6		11071
	72473905	Pi 73100 BN PS vst 10	PS vst 10		11071
	72479344	Pi 75100 BN PS vst 25	PS vst 25		11071

8. Technical specifications

Design:	flange filter
Nominal pressure:	315 bar (4480 psi)
without bypass valve:	2x10 ⁶ load changes
with bypass valve:	10 ⁶ load changes
Test pressure:	460 bar (6542 psi)
Temperature range:	-10 °C to +100 °C (other temperature ranges on request)
Bypass setting:	Δp 7 bar \pm 10 %
Filter head material:	GGG
Filter housing material:	St
Sealing material:	NBR
Maintenance indicator setting:	Δp 5 bar \pm 10 %
Electrical data of maintenance indicator:	
Maximum voltage:	250 V AC/200 V DC
Maximum current:	1 A
Contact load:	70 W
Type of protection:	IP 65 in inserted and secured status
Contact:	normally open/closed
Cable connection:	M20x1.5

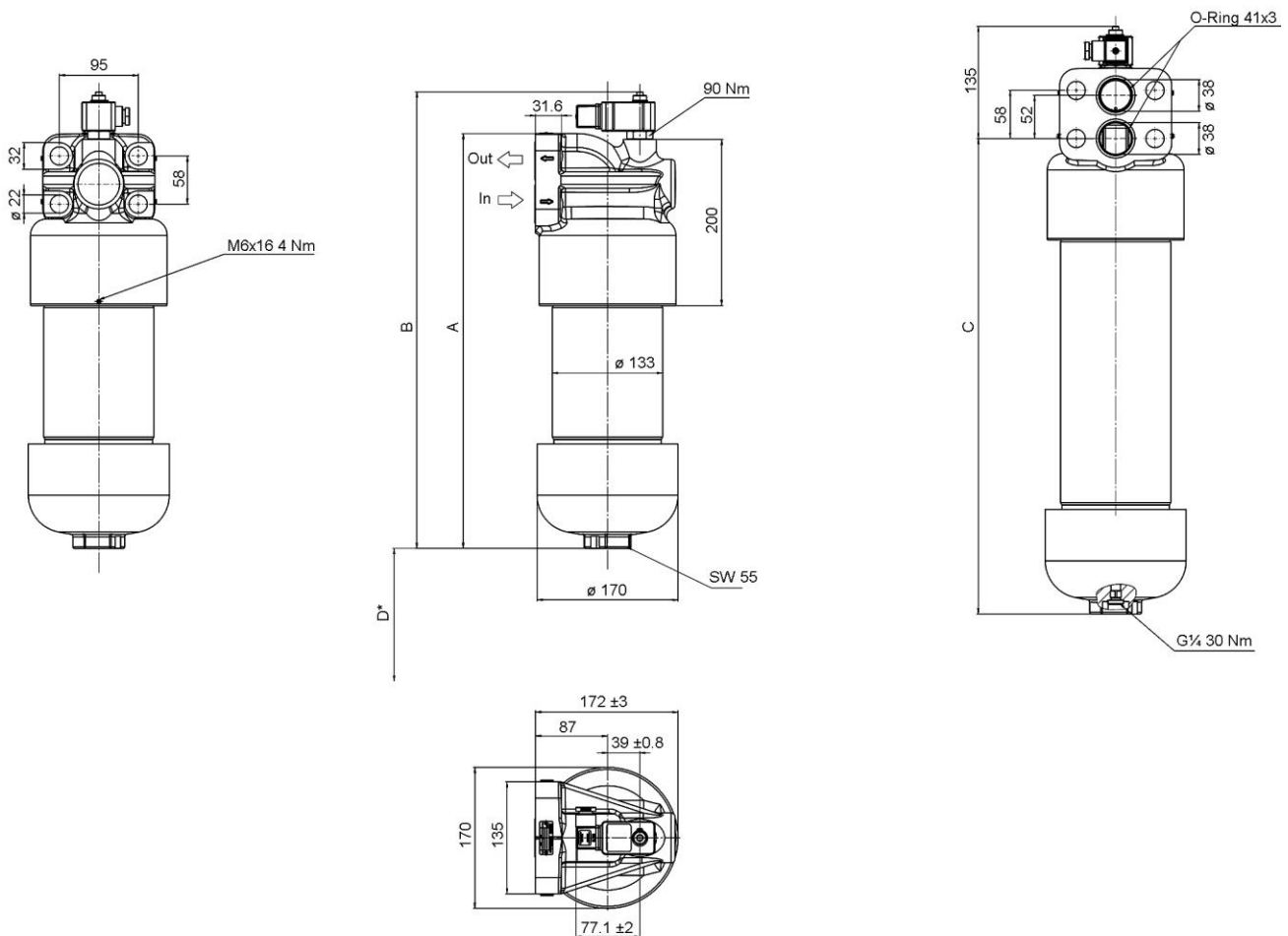
The switching function can be changed by turning the electric upper part by 180° (normally closed contact or normally open contact). The state on delivery is a normally closed contact. By inductivity in the direct current circuit the use of suitable protection circuit should be considered. Further maintenance indicator details and designs are available in the maintenance indicator data sheet.

We draw attention to the fact that all values indicated are average values which do not always occur in specific cases of application. Our products are continually being further developed. Values, dimensions and weights can change as a result of this. Our specialized department will be pleased to offer you advice.

We recommend to contact us concerning applications of our filters in areas governed by the EU Directive 94/9 EG (ATEX 95). The standard version can be used for liquids based on mineral oil (corresponding to the fluids in Group 2 of Directive 97/23 EG Article 9). If you consider to use other fluids please contact us for additional support.

Subject to technical alteration.

9. Dimensions



In = Inlet
Out = Outlet

D* = Clearance required
Flange DN 38

All dimensions in mm.

Type	A ±8	B ±10	C ±5	D min.	Weight [kg]	Volumen [L]
Pi 344070	537	587	456	363	42	3.3
Pi 344100	692	742	607	520	50	4.6

10. Installation, operating and maintenance instructions

10.1 Filter installation

When installing the filter make sure that sufficient space is available to remove filter element and filter housing. Preferably the filter should be installed with the filter housing pointing downwards. The maintenance indicator must be visible.

10.2 Connecting the electrical maintenance indicator

The electrical connection is connected via a 2-pole appliance plug according to DIN EN 175301-803 with poles marked 1 and 2. The electrical section can be inverted to change from normally open position to normally closed position or vice versa.

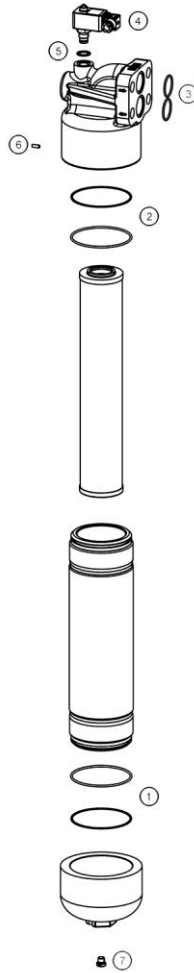
10.3 When should the filter element be replaced?

1. Filters equipped with visual and electrical maintenance indicator:
During cold starts, the indicator may give a warning signal. Press the red button of the visual indicator once again only after operating temperature has been reached. If the red button immediately pops up again and/or the electrical signal has not switched off after reaching operating temperature, the filter element must be replaced after the end of the shift.
2. Filters without maintenance indicator: The filter element should be replaced after the trial run or flushing of the system. Afterwards follow instructions of the manufacturer.
3. Please always ensure that you have original Filtration Group spare elements in stock: Disposable elements (PS) cannot be cleaned.

10.4 Element replacement

1. Stop system and relieve filter from pressure.
2. Empty the filter housing by removing the drain plug.
3. Unscrew the filter housing cover by turning counter-clockwise. Clean the housing and cover using a suitable cleaning solvent.
4. Remove element by pulling down carefully.
5. Check o-ring for damage. Replace, if necessary.
6. Make sure that the order number on the spare element corresponds to the order number of the filter name-plate. To ensure no contamination occurs during the exchange of the element first open the plastic bag and push the element over the spigot in the filter head. Now remove plastic bag.
7. Lightly lubricate the threads of the filter housing a little bit and screw onto the housing cover.
8. Check seals of vent drain plug - if necessary, please replace. Torque drain plug 30 Nm.
9. Switch on system again and vent filter at a suitable point of operating.
10. Check the filter for leakage.

11. Spare parts list



Order numbers for spare parts		
Position	Type	Order number *
① to ③	Seal kit for filter	
	NBR	*
④	Maintenance indicator	
	Visual 5 bar PiS 3093/5	77669914
	Electrical 5 bar PiS 3092/5	77669864
	Electrical upper section only	77536550
⑤	Seal kit for maintenance indicator	
	NBR	77760275
⑥	Locking thread pin	*
⑦	Drain plug	*

* on request