User's Guide

Contents

INSTRUCTIONS AND WARNINGS

Installing and disconnecting: *Always make sure that the process pipe or chest is unpressurized and empty. Watch out for the cutting blade when testing a disconnected sampler. When adjusting the piston stroke with the cover plate removed, be careful to keep your fingers out of the exposed opening because there are moving parts (numbers 11 and 13 in Fig. 4). Use a tool, not your fingers!*

While taking a sample: *Never stand at close proximity to the sample outlet pipe or discharge tube while sampling. Watch out for discharging steam and hot sample especially when taking a sample from a blow line.*

metso automation

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1. GENERAL DESCRIPTION

NOVE H can be used for sampling high-consistency pulps and/or pulps that contain e.g. shives and knots.

NOVE H is suitable for all pulp types and for all application points in pulp and paper manufacture (also digester blow line).

NOVE H does not get blocked during operation or during idle times.

The internal parts of NOVE H, and the pulp discharge tube connected to it, can be flushed clean after taking a pulp sample.

The closing mechanism of NOVE H xxxB is provided with a cutting blade. The blade will cut any knots and other pieces of wood at the closing stage, so that they are not left between the sealing faces and prevent complete closing. The closing mechanism does not contain any wearing rubber or plastic parts; all sealing faces are made of metal.

NOVE H has been designed to withstand all pressures and temperatures occurring at the various application points. Sampling with NOVE H is fully controlled and safe; if the manufacturer's instructions and warnings are observed, no pulp will be splashed on the person taking the sample. The sample discharge rate can be regulated by adjusting the stroke of the closing piston. The position of the flow inlet can be selected in 90° steps according to the direction of pulp flow.

The amount of pulp flowing to the sewer system during sampling is negligible.

2. INSTALLATION

Figures 1 and 2 show the installation of the process coupling selected in accordance with Technical Specifications. NOVE H should be installed at a point where the pulp flows effectively.

First make a 92 mm hole on the process pipe and prepare it for a V-weld. Then weld the process coupling carefully on the hole through the entire wall thickness of the process pipe, as shown in Figures 1 and 2.

Attach NOVE H to the process coupling with a mounting collar; the same collar is used for mounting the SMART-PULP consistency transmitters (see Fig. 3).

Connect a min. 300 mm, 2" discharge tube to NOVE H's sample outlet. The discharge tube should preferably be made of acid-resistant metal. Attach the tube to the collar-mounted coupling sleeve by welding or using a threaded connection.

The tube must be supported at one or more points, depending on its length.

Use as short a discharge pipe as possible and preferably use MUKI H (see Fig. 3) for easy, safe and accurate sampling.

Sample from digester blow line, or sample containing hazardous chemicals:

Use MUKI H sample receptacle (Fig. 3) in hazardous conditions, when installing the sampler on a digester blow line, or when the pulp contains any hazardous chemicals. Keep the sample discharge tube as short as possible with MUKI H.

Installing compressed air regulating valve:

Mount the manually operated compressed air regulating valve (15, Fig. 3) with screws on a steady base near the sampler.

Attach the warning plate supplied for the regulating valve at close proximity to the valve, where it will be easy to see.

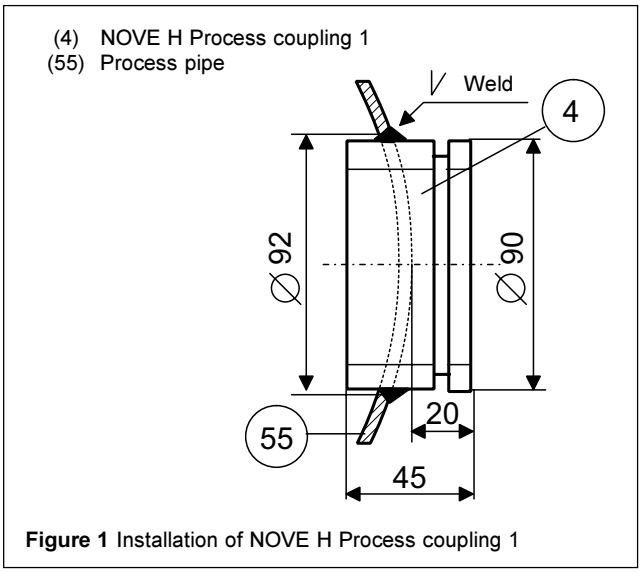


Figure 1 Installation of NOVE H Process coupling 1

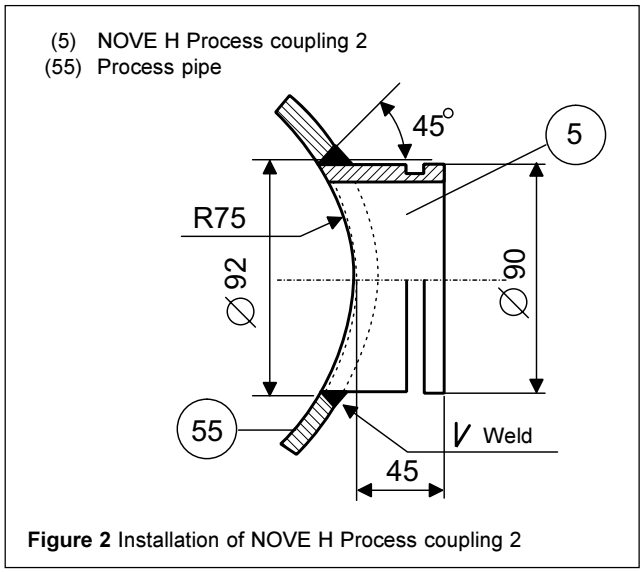


Figure 2 Installation of NOVE H Process coupling 2

3. ACTIONS DURING OPERATION

3.1. Flushing

For NOVE H flushing is compulsory.

Flushing can be arranged as shown in Figure 3, i.e. by connecting to the sampler a water pipe equipped with a manually operated valves.

3.2 Adjusting the direction of the closing piston's flow inlet (sample inlet)

The cover (part 3, Fig. 3) must be removed for the adjustment. Also see Figures 4 and 5.

Procedure:

The flat surface (C, Fig. 4) on the piston shaft shows the direction of the flow inlet.

Unscrew the retaining M6 Allen screw (12, Fig. 4) and turn the shaft by the 13 mm spanner gap (D) to one of the four optional directions (in 90° steps).

Finally tighten the screw (12) carefully and replace the cover (3, Fig. 3).

It is recommendable to set the flow inlet at a 90° angle with respect to the direction of pulp flow. If the pulp contains hard objects, such as stones or pieces of metal wire, you can protect the cutting blade (E, Fig. 5) by turning the flow inlet (A) in the direction of pulp flow (i.e. in downstream direction).

3.3 Adjusting the pulp sample discharge rate

The cover (3, Fig. 3) must be removed before making this adjustment.

Procedure:

Adjust the stroke of the closing piston (9, Fig. 4) by means of the adjusting nut (10). The longer the piston stroke, the more the flow inlet will open. The discharge velocity of the pulp from the sampler is proportional to process pressure and to the flow inlet opening. Select the suitable velocity at sampling time by turning the adjusting nut with a screwdriver by the holes (B) on the nut.

With MUKI H adjust the stroke to maximum.

When testing the sampler, take care to keep your fingers off the moving parts.

Close the cover carefully after making the adjustment and make sure that the strips of sheet metal (34, Fig. 6) on the cover are pressed against the adjusting nut. When the cover is in place, these strips will prevent the adjusting nut from rotating.

3.4 Sample taking

If you are taking a sample from a digester blow line or if the pulp contains a hazardous amount of dangerous chemicals, ensure sampling safety as instructed in section "Installation".

In other conditions the sample can be taken directly to a 1–5 liter container held manually; however, MUKI H is recommended even for these applications.

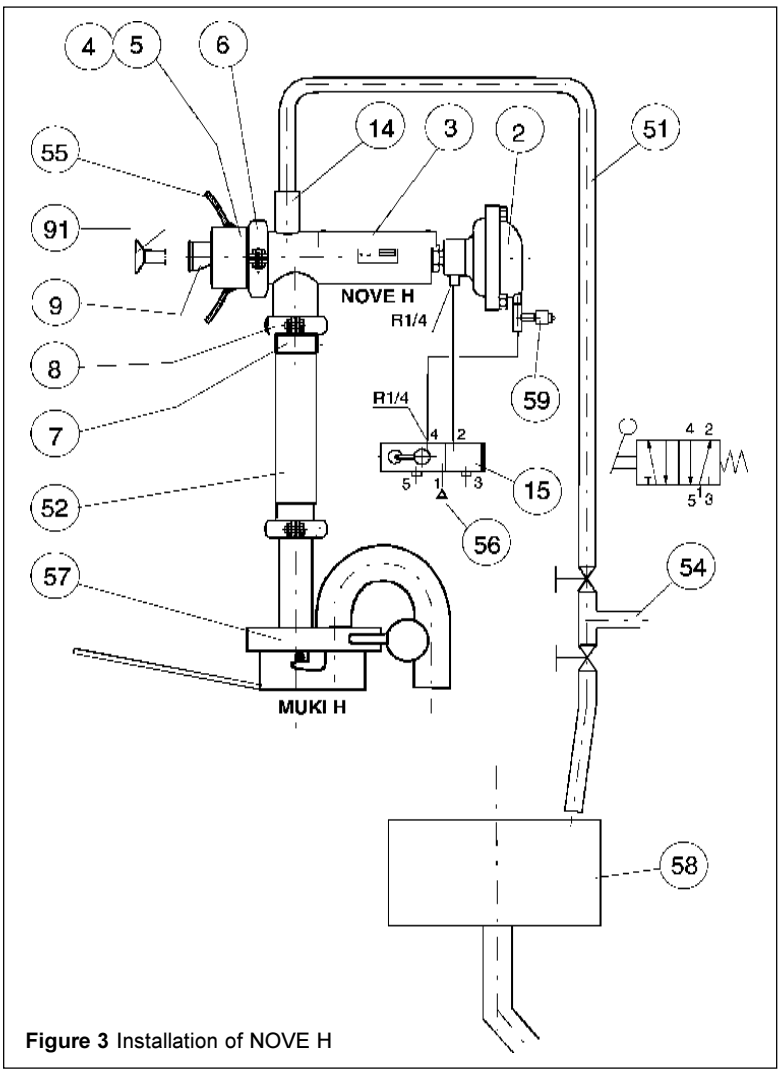
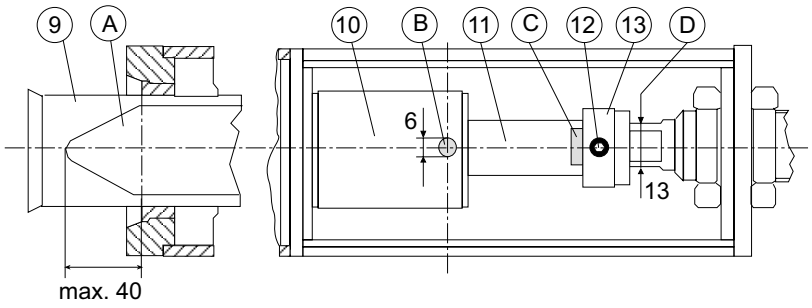


Figure 3 Installation of NOVE H

((1)) NOVE H
(2) Actuator
(3) Cover
(4) NOVE H Process coupling 1*
(5) NOVE H Process coupling 2*
(6) Mounting collar
(7) Connection for sample discharge tube
(8) Mounting collar for sample discharge tube
(9) **B**: Cutting plunger for unscreened pulp
(91) **A**: Disk valve for screened pulp
(14) Water flushing connection
(15) Manually operated compressed air regulating valve
(51) Water pipe **
(52) Sample discharge tube **
(54) Water supply **
(55) Process pipe **
(56) Pressured air supply **
(57) MUKI H Sample receptacle. Option. See document G 511
(58) Overflow funnel **
(59) Pressure switch assy. Option

* Optional process couplings
** Not included in delivery



(9) Closing piston
(10) Sample discharge rate adjusting nut
(11) Closing piston shaft
(12) Retaining Allen screw
(13) Piston rotation stopper
(A) Flow inlet of closing piston
(B) Hole on adjusting nut (4 holes)
(C) Flat surface showing the direction of flow inlet
(D) Spanner gap, 13 mm

Figure 4 Adjusting the sample discharge rate and setting the direction of flow inlet (A) (shown from above)

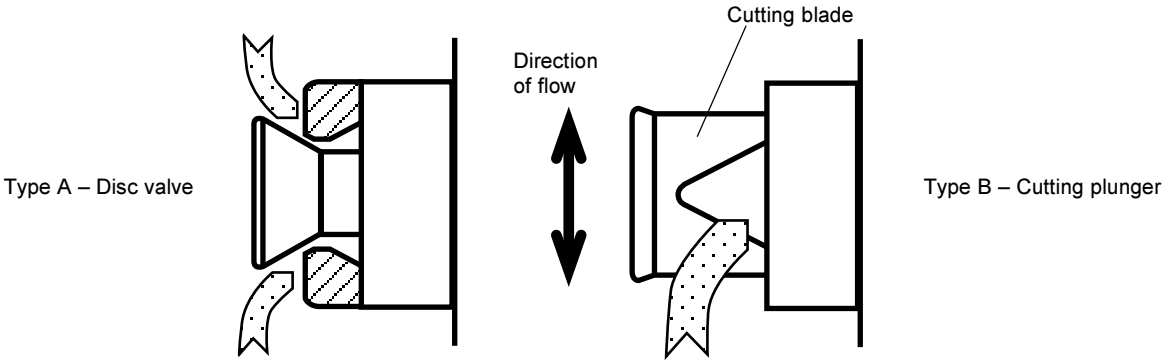


Figure 5 Closing piston alternatives

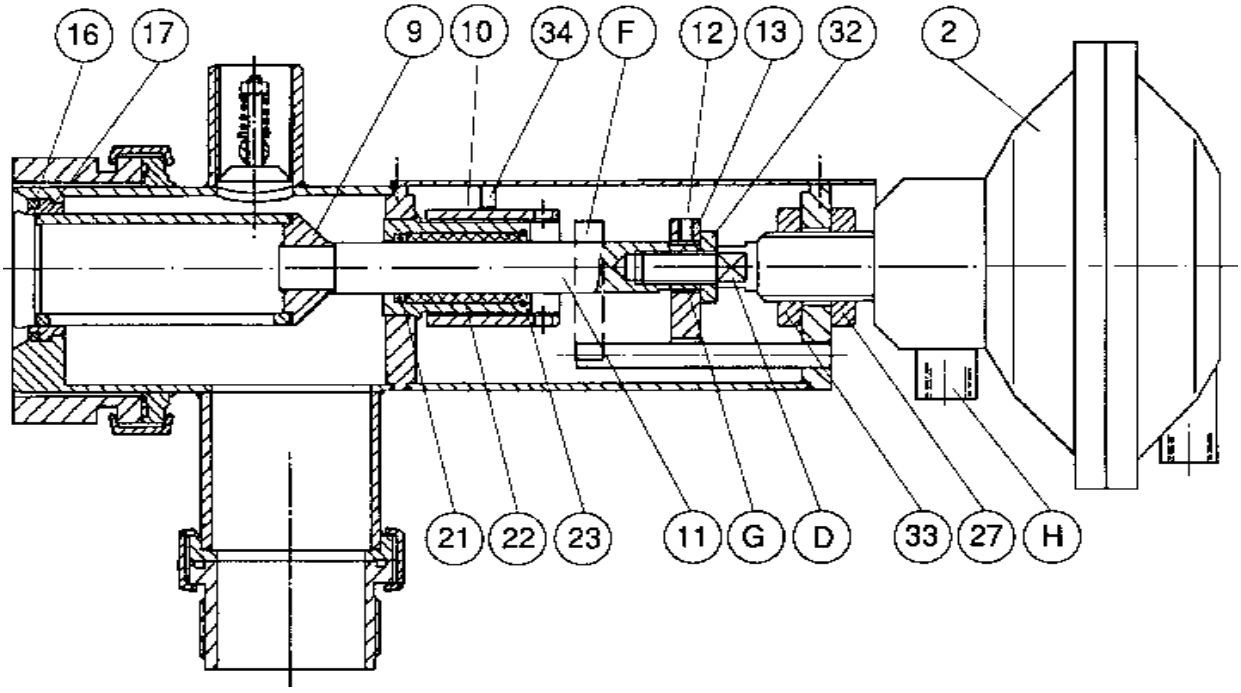


Figure 6 Removing and installing the closing piston

4. MAINTENANCE

If the seal ring and/or closing piston show any signs of wear or damage, the affected part(s) must be replaced.

4.1. Removing the closing piston (9, Fig. 6)

Procedure:

- Loosen the retaining Allen screw (12) so that you can move the rotation stopper (13) left to position F.
- Unscrew the closing piston shaft (11) from the actuator piston shaft with two set wrenches: spanner gaps: G = 16 mm and D =13 mm. If necessary, heat the connection up to 120°C to facilitate the disconnecting (locking medium has been applied to the thread).
- Pull out the piston.

4.2. Removing the seal ring (17, Fig. 7)

(Also removing the locking ring, part 16, in Hastelloy version)

Procedure:

- Mount the sampler on a vise, in the position shown in Fig. 7.
- Push in the counterpin (70) as shown in Fig. 7.
- Remove the seat ring (with locking ring) with the extracting tool (71).

4.3. Installing the seal ring (17, Fig. 8)

(Also installing the locking ring, part 16 in Fig. 7, in Hastelloy version)

The seal ring is secured with a press-on fit.

Procedure:

- Place the seal ring (17) with the locking ring in a freezer; the seal ring should preferably be attached to the mounting tool. Allow to cool to at least –10°C.
- Heat the sampler's tip section to approx. 100°C, for example in boiling water.
- Attach the sampler to a vise, in the position shown in Fig. 8.
- Remove the seal ring and mounting tool from the freezer. Drive in the seal ring with a hammer and the mounting tool.

4.4. Replacing the bearing bush (22, Fig. 6) and O-ring (21)

If the bearing bush shows considerable slack, it should be replaced.

Procedure:

- Remove the sample discharge rate adjusting nut (10).
- Remove the locking ring (23) with a screwdriver.
- Remove the actuator (2): unscrew the nut (27) and remove the backing ring (32) and nut (33).
- Attach the sampler to a vise with the actuator end upwards.
- Remove the PTFE bearing bush (22, Fig. 9) with the extracting tool (73). Before removing, make sure that the nut (K) on the tool is screwed fully down (see Fig. 9)

The end of the tool contains a screw pin. Screw the tool by its turning arms into the bearing bush as shown in Fig. 9. Then pull the bush out of its casing by turning nut K.

- Also remove the old O-ring (21) from the bottom of the bearing bush.

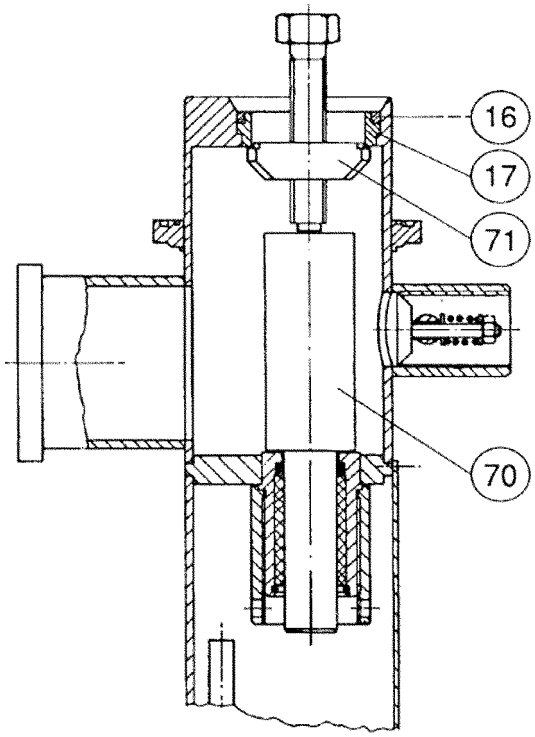


Figure 7 Removing the seal ring

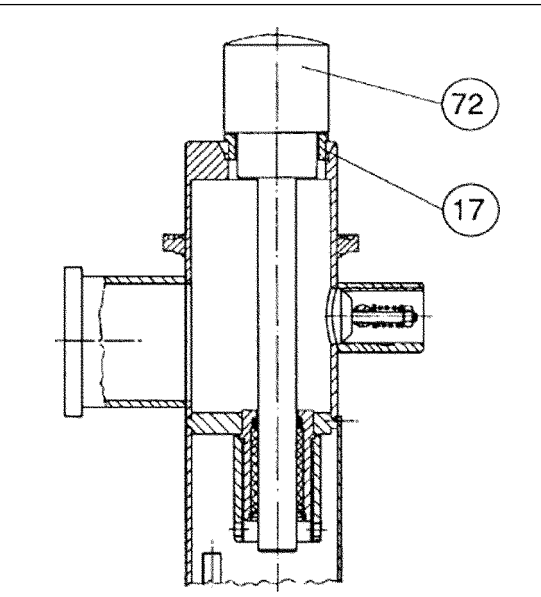


Figure 8 Installing the seal ring

- Press in the new O-ring.
- Use the push bar (74, Fig. 10) to push in the new bearing bush (22) so far that the locking ring (23, Fig. 6) goes home.

NOTE: Be careful not to push the bearing bush too heavily and too deep – it must not exert pressure on the O-ring!

- Screw in the sample discharge rate adjusting nut (10, Fig. 6).
- Attach the actuator loosely, so that the retaining nuts (27 and 33) are at the actuator piston end of the threaded part.

4.5. Installing the closing piston (9, Fig. 6)

Procedure:

- If the actuator is not in place, mount it loosely so that the retaining nuts (27 and 33) are at the actuator piston end of the threaded part.
- Make sure that the backing ring (32) is turned fully home.
- Apply some easily removable locking medium (e.g. Loctite 222) to the connecting thread of the closing piston shaft (11) and actuator piston shaft.
- Push in the closing piston and place the piston rotation stopper (13) on the shaft (11). Tighten the screw connection, spanner gaps G = 16 mm and D = 13 mm.

4.6. Aligning the actuator (Fig. 6)

If you have replaced the actuator or removed it to replace the bearing bush, refer to Section 4.5.

Align the actuator as follows:

- Attach the sampler to a vise with the actuator end upwards.
- Apply compressed air (approx. 6 bar) to the actuating cylinder through inlet H.

NOTE: Watch out for the cutting blade!

- Turn nut (33, Fig. 6) to the left, up to the end of the thread.
- Turn nut (27) to the left, as far as it turns freely. Turn approx. 1/2 turn further from the point where the resistance increases.
- Switch off the compressed air.
- Turn nut (33) somewhat back towards the other nut.
- Loosen nut (27) slightly to ensure that the actuator is aligned with the closing piston's shaft as accurately as possible.
- Tighten nut (27) properly. Ensure that the connection does not shift sideways.
- Move the closing piston by part 12 (Fig. 6) to make sure that it moves freely back and forth.

4.7. Setting the piston rotation stopper

- Place the rotation stopper (13, Fig. 6) in position.
- Proceed as instructed in Section 3.2.

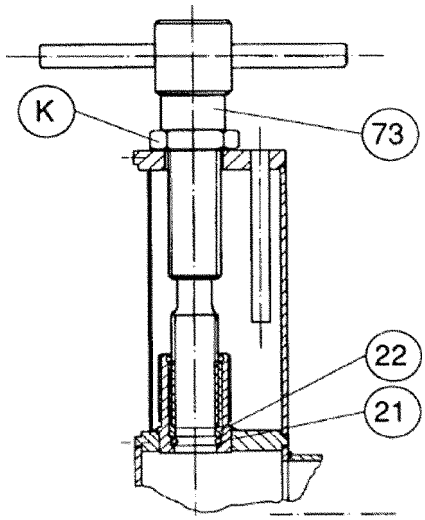


Figure 9 Replacing the bearing bush 22 and O-ring 21

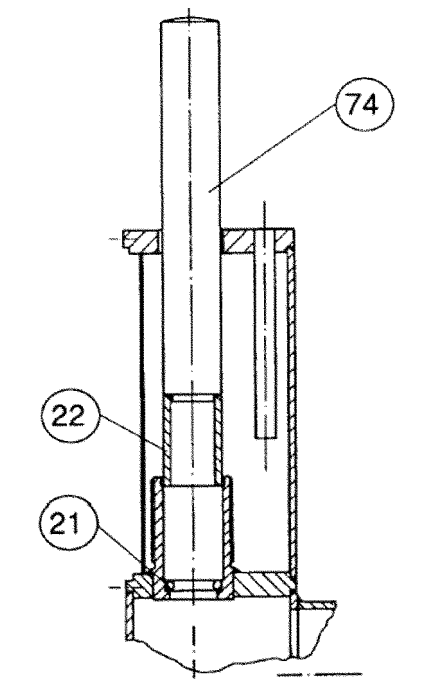


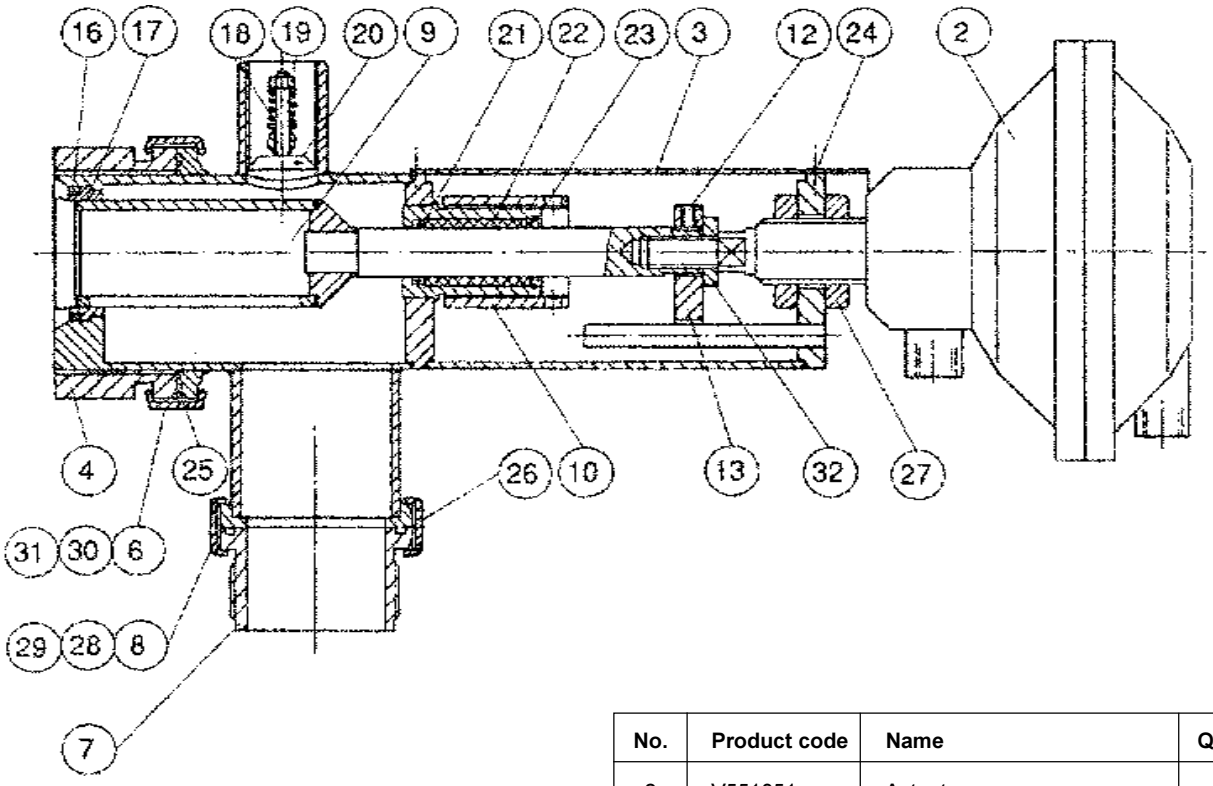
Figure 10 Replacing the bearing bush 22 and O-ring 21

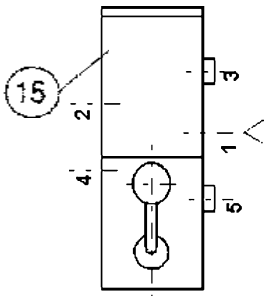
5. PARTS LIST

Parts designated with an asterisk (*) are spares.

When ordering spares, please quote the number of this document (G510VA2002-03-19), sampler type, model code and serial number, and the quantity, name and number of the part you need.

Example: G510VA 2002-03-19, MOVE HS 22 B1, MI, 9088, 1 regulating valve Part No. 15.





No.	Product code	Name	Qty.	
2	V551851	Actuator	1	
3		Cover	1	
*4	V550594	Process coupling 2	1	
*4	V550791	Process coupling 1	1	
*6	V82220000	Mounting collar (NS 65)	1	
*7	V550580	Extension coupling	1	
*8	V552058	Mounting collar (NS 50)	1	
*9	V550575	Closing piston B Nitronic	1	
10		Adjusting nut	1	
12		Retaining screw M6 x 8	1	
13		Rotation stopper	1	
*15	V552621	Regulating valve	1	
*16	V550801	Locking ring	1	1)
*17	V550600	Seal ring AISI 316	1	
18		Pressure spring	1	
19		Hex nut M5	1	
20		Valve	1	
*21	80011801	O-ring 18 x 3	1	
*22	V550599	Bearing bush	1	
*23	V550602	Locking ring	1	
24		Cylinder-head screw M4 x 6	2	
*25	80500860	Seal	1	
*26	80550411	Seal	1	
27		Nut	2	
28		Hex screw M8 x 40	2	
29		Hex nut M8	2	
30		Hex screw M 10x 40	2	
31		Hex nut M 10	2	
32		Backing ring	1	
		Pressure switch	1	
80	241851	Tool kit	1	

1) In Hastelloy version only.

TECHNICAL SPECIFICATIONS

Types and materials

- Refer to the Specification Table.

Applicability

- For 0-18 % Cs consistency range.

Recommended application ranges:

- For 7-18 % Cs range

- For pulps containing knots, shives, strings and other such solid particles: 0-18 % Cs range; sampling plunger type: B.

Process pressure

- Min. refer to Figure 11.

- Max. 25 bar (350 psi)

- Max. 10 bar (224 psi) for fiberglass-reinforced plastic coupling.

Process temperature

- Max. 200 °C (392 F)

- For fiberglass-reinforced plastic coupling: the same as for process piping.

Actuator operating pressure

- 5-8 bar (71-114 psi)

- Recommended: 6 bar (85 psi), which corresponds to 3000 N opening/closing force of plunger

- A spring keeps the valve closed when air supply is cut off.

Process couplings

NOVE H Sxxx1

- Clamp-mounted process coupling 1: normal use.

NOVE H Sxxx 2

- Clamp-mounted process coupling 2: for especially abrasive applications, e.g. digester blow line.

NOVE HFx8xx

- Flange-mounted fiberglass-reinforced plastic process coupling for fiberglass-reinforced plastic pipe.

NOVE HFx(2, 3 or 6)xx

- Flange-mounted metal process coupling.

The supplied items are shown in dimensional drawings.

Materials

– Parts in contact with process medium

- NOVE Hx2xxx:AISI 316L and acid-resistant special steel.

- NOVE H x3xB x : Hast. C276 and titanium (AISI 316L *))

- NOVE Hx3xAx: Hast. C276 (AISI 316L *))

- MOVE H x6xxx: titanium

*) Only in contact with process medium during sampling.

– Other parts

- AISI 316L, aluminium alloy and structural steel with protective paint

Weights

- NOVE H S: 7.5 kg (17 lbs)

- NOVE H F: 13.5 kg (31 lbs)

Specification Table

NOVE H ☐☐☐☐☐☐

Types

S Installation on clamp-mounted coupling
F Flange-mounted

Sampler material

2 AIS1316L
3 HastelloyC276
6 Titanium

Process coupling material

2 AIS1316L
3 Hastelloy C276
6 Titanium
8 Fiberglass-reinforced plastic
0 Process coupling not supplied

Sampling plunger type

A Disk valve, for screened pulps
B Cutting plunger

Application point

1 Standard installations, Process coupling 1
2 Blow line installation, Process coupling 2

Pressure switch assy. (Switch)

- When NOVE H material is AISI 316, select cutting plunger-type (**B**) in first place.
- If NOVE H material Titanium or Hastelloy must be used, select disk-type (A) valve.
- Use MUKI H option for safe, easy and accurate sampling

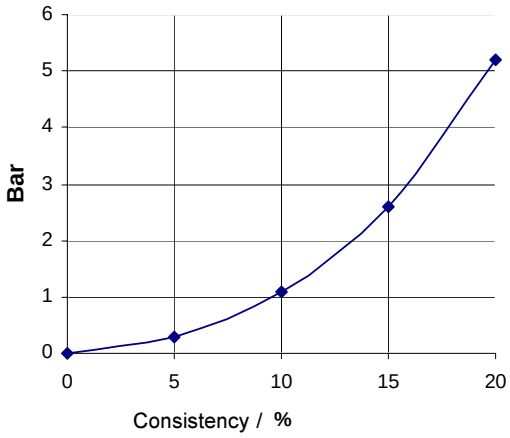


Figure 11 Minimum required process pressure

Connections

- Water flushing connection: R3/4

(The sampler should always be flushed after sample taking.)

- Actuator connections: R1/4 (2 conn.)

- Actuator control valve connections: R1/4 (5 conn.)

- Sample discharge tube connection: clamp mounting and R2 thread.

Patents

- FI 84665

- F187115

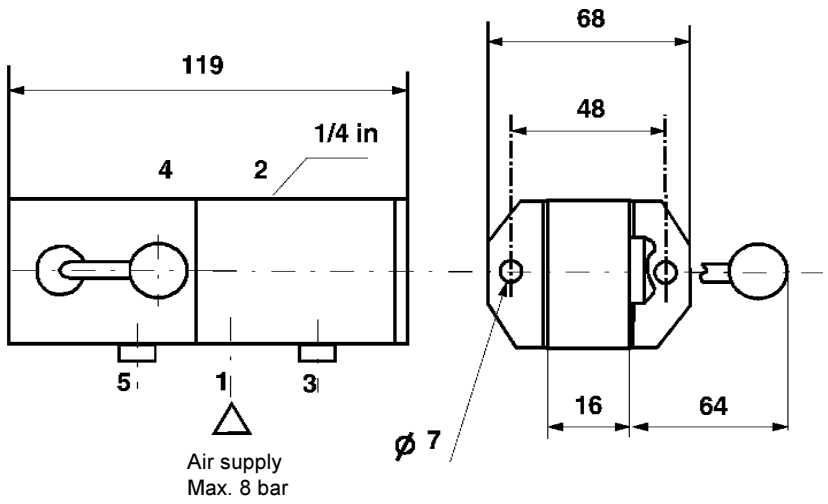


Figure 12 Air regulating valve dimensions and connections

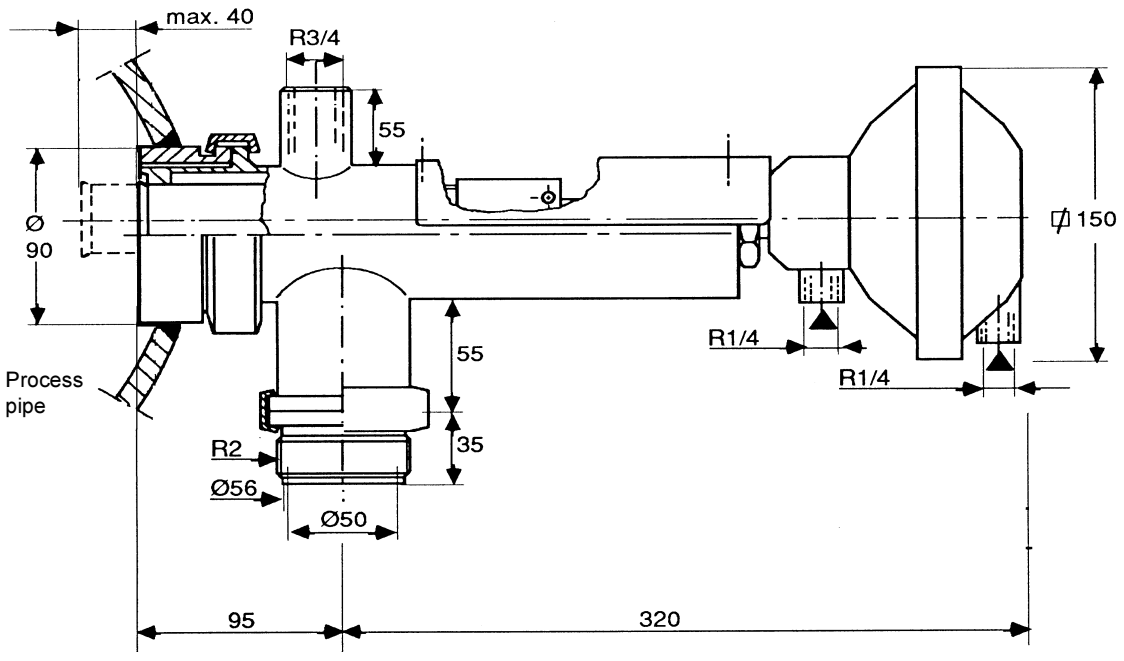
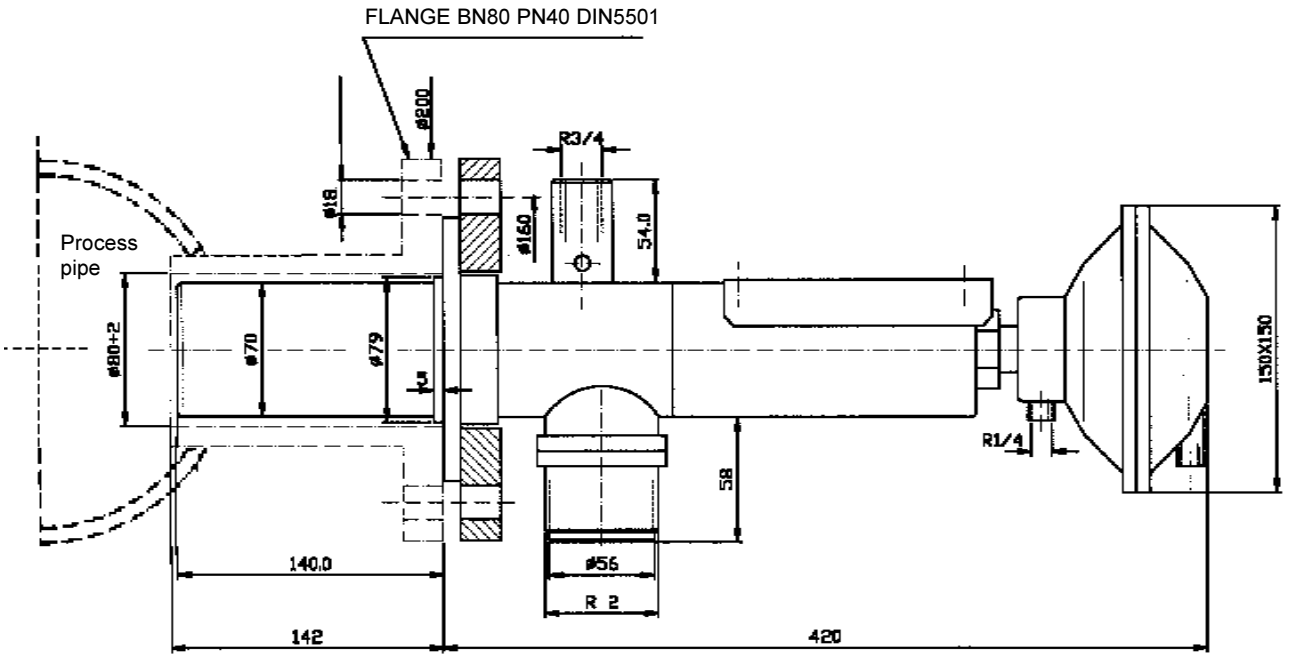


Figure 13 Dimensions for NOVE HSxxx1
- Process coupling, seal and mountings are supplied with sampler

Metal coupling (NOVE HFx0xx)

- Seal, screws and nuts are supplied with sampler.

(Metal flanged process coupling is not supplied with sampler.)



Fiberglass-reinforced plastic coupling (NOVE HFx8xx)

- Coupling, seal, mounting bolts and nuts are supplied with sampler

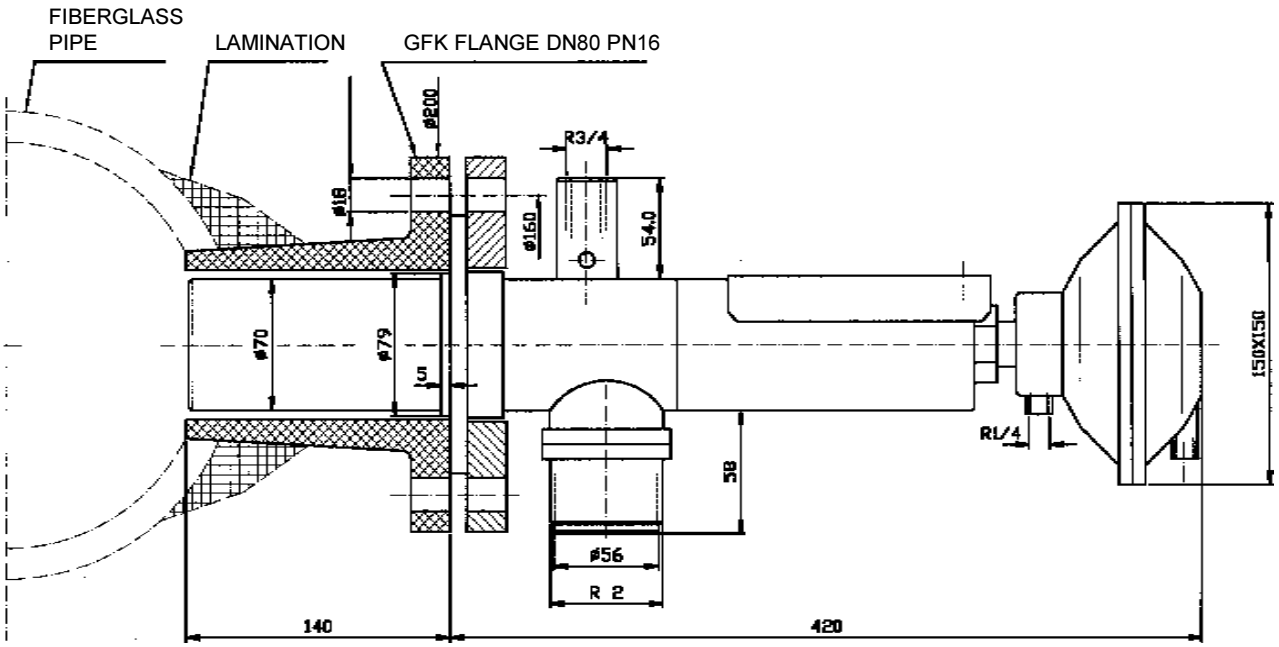


Figure 14 Samplers mounted on flanged coupling (NOVE HFxxxx)

AVAILABLE NOVE H TYPES:

Product: NOVE H xxxBx Suitable also for pulps containing knots, sticks and debris. etc. 0 to 18 %Cs		
Product Code M800150 M8001501 M800151	Clamp mounting NOVEHS22B1 NOVEHS22B2 NOVEHS33B1	 AIS1316L AIS1316L HC-276
M800154	Flange mounting NOVEHF20B0	 AIS1316L
 M800188 M800185 M800152	Flange mounting for Plastic Pipes NOVE H F28 B1 NOVE H F38 B1 NOVEHF68B1	 AISI 316L HC-276 TI
Product: NOVE H xxxAx For screened pulps 7 to 18% Cs		
 M800157 M800181 M800191	Clamp mounting NOVEHS22A1 NOVEHS33A1 NOVE H S66 A1	 AIS1316L HC-276 TI
 M800182 M800186 M800183 M800193	Flange mounting NOVE H F20 A0 NOVE H F30 A1 NOVE H F60 A0 NOVE H F60 B0	 AISI 316L HC-276 TI Ti
 M800187 M800184	Flange mounting for plastic pipes NOVE H F38 A1 NOVE H F68 A1	 HC-276 TI
Pressure switch assy. A82920016	SWITCH	
Sample receptacle M800155	MUKI H	

NOTE: Manufacturer reserves the right to make technical changes without prior notice.

NOVE Sampler for high-consistency pulps

G510
2002-03-25

NOVE H is a pneumatically controlled sampler designed for sampling high-consistency wood pulps and/or pulps containing knots and shives.
NOVE H can be used for all pulp types and at all application points in pulp and paper manufacturing processes, also in a digester blow line.

Technical Specifications

Types and materials - Refer to the Specification Table.

Applicability
- For 0-18 % Cs consistency range.
Recommended application ranges:
- For 7-18 % Cs range
- For pulps containing knots, shives, strings and other such solid particles: 0-18 % Cs range; sampling plunger type: B.

Process pressure
- Min. refer to Figure 1.
- Max. 25 bar (350 psi)
- Max. 10 bar (224 psi) for fiberglass-reinforced plastic coupling.

Process temperature
- Max. 200 °C (392 F)
- For fiberglass-reinforced plastic coupling: the same as for process piping.

Actuator operating pressure
- 5-8 bar (71-114 psi)
- Recommended: 6 bar (85 psi), which corresponds to 3000 N opening/closing force of plunger
- A spring keeps the valve closed when air supply is cut off.

Process couplings
NOVE H Sxxx1
- Clamp-mounted process coupling 1: normal use.
NOVE H Sxxx 2
- Clamp-mounted process coupling 2: for especially abrasive applications, e.g. digester blow line.
NOVE HFx8xx
- Flange-mounted fiberglass-reinforced plastic process coupling for fiberglass-reinforced plastic pipe.
NOVE HFx(2, 3 or 6)xx
- Flange-mounted metal process coupling.

The supplied items are shown in dimensional drawings.

Materials
– Parts in contact with process medium
- NOVE Hx2xxx:AISI 316L and acid-resistant special steel.
- NOVE H x3xB x : Hast. C276 and titanium (AISI 316L *))
- NOVE Hx3xAx: Hast. C276 (AISI 316L *))
- MOVE H x6xxx: titanium
*) Only in contact with process medium during sampling.
– Other parts
- AISI 316L, aluminium alloy and structural steel with protective paint

Specification Table **NOVE H** [ ] [ ] [ ] [ ] [ ] [ ]

Types
S Installation on clamp-mounted coupling
F Flange-mounted

Sampler material
2 AIS1316L
3 HastelloyC276
6 Titanium

Process coupling material
2 AIS1316L
3 Hastelloy C276
6 Titanium
8 Fiberglass-reinforced plastic
0 Process coupling not supplied

Sampling plunger type
A Disk valve, for screened pulps
B Cutting plunger

Application point
1 Standard installations, Process coupling 1
2 Blow line installation, Process coupling 2

Pressure switch assy. (Switch)

NOTE: Use MUKI H option for safe, easy and accurate sampling

Recommended types (for other variations please contact your sales representative)

NOVEHS22B1 AIS1316L	NOVEHS33A1 HC-276
NOVEHS22B2 AIS1316L	NOVE H S66 A1 TI
NOVEHS33B1 HC-276	NOVE H F20 A0 AISI 316L
NOVEHF20B0 AIS1316L	NOVE H F30 A1 HC-276
NOVE H F28 B1 AISI 316L	NOVE H F60 A0 TI
NOVE H F38 B1 HC-276	NOVE H F60 B0 Ti
NOVEHF68B1 TI	NOVE H F38 A1 HC-276
NOVEHS22A1 AIS1316L	NOVE H F68 A 1 TI

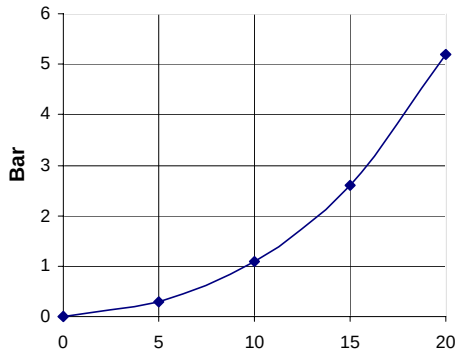


Figure 1 Minimum required process pressure

metso automation

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Sampling plunger types (Fig. 2)
A: Disk valve construction. Suitable for screened pulp which does not contain knots, shives, strings or other solid particles.
B: Sampling plunger with a cutting blade. Also suitable for pulps containing knots, shives, strings, or other such solid particles.
The inlet opening of both plunger types can be adjusted with an adjusting screw.

INSTALLATION
NOTE: The person doing the installation should be a qualified techician.
Install NOVE H at a point that will give as representative a sample as possible (not in dead zone of flow).
Weld the NOVE H process coupling to a hole made on the process pipe. Refer to figures 3, 4 and 5 and the dimensional drawings. The fiberglass-reinforced plastic coupling is laminated on the process pipe.
Mount NOVE H with its seals on the coupling and connect as shown in figure 3.
Mount the compressed air control valve and the warning sign supplied with the sampler side by side on a wall near the sampling point.

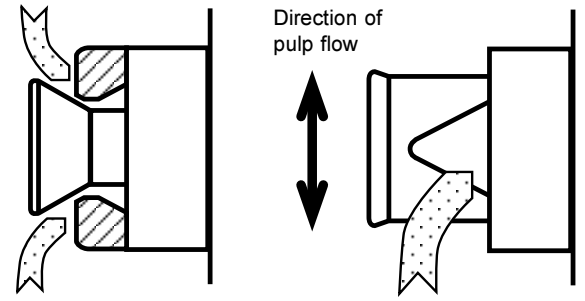


Figure 2 Sampling plunger types

NOTE!
If the sample temperature exceeds 100°C (212°F) or if the pulp contains hazardous chemicals, the control valve and warning sign must be mounted at least 3 m from the sampling point. The warning sign must be placed at a location where everyone moving in the area can see it!
Build a flat-bottomed receiver basin for overflowing pulp under the sample discharge tube, and install a discharge pipe from the bottom of the basin to sewer.
Use MUKI H option for safe, easy and accurate sampling.

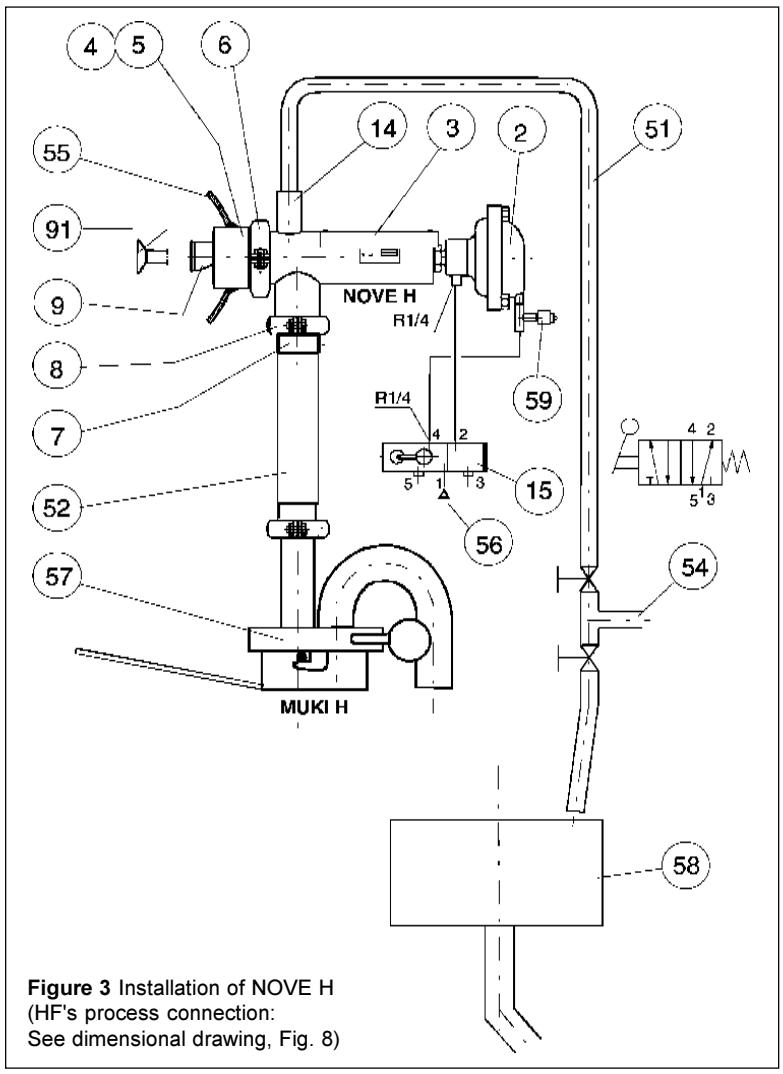


Figure 3 Installation of NOVE H
(HF's process connection:
See dimensional drawing, Fig. 8)

((1)) NOVE H
(2) Actuator
(3) Cover
(4) NOVE H Process coupling 1*
(5) NOVE H Process coupling 2*
(6) Mounting collar
(7) Connection for sample discharge tube
(8) Mounting collar for sample discharge tube
(9) **B**: Cutting plunger for unscreened pulp
(91) **A**: Disk valve for screened pulp
(14) Water flushing connection
(15) Manually operated compressed air regulating valve
(51) Water pipe **
(52) Sample discharge tube **
(54) Water supply **
(55) Process pipe **
(56) Pressured air supply **
(57) MUKI H Sample receptacle. Option. See document G 511
(58) Overflow funnel **
(59) Pressure switch assy. Option

* Optional process couplings
** Not included in delivery

CONNECTIONS
- Water flushing connection: R3/4
(The sampler should always be flushed after sample taking.)
- Actuator connections: R1/4 (2 conn.)
- Actuator control valve connections: R1/4 (5 conn.)
- Sample discharge tube connection: clamp mounting and R2 thread.

Weights
- NOVE H S: 7.5 kg (17 lbs)
- NOVE H F: 13.5 kg (31 lbs)

Patents
- FI 84665
- F187115

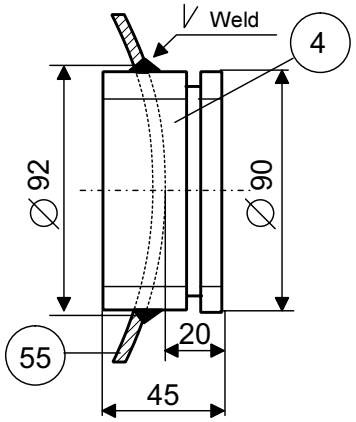


Figure 4 Installation of NOVE H Process coupling 1

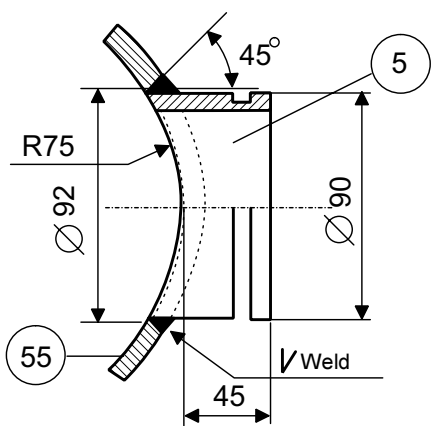


Figure 5 Installation of NOVE H Process coupling 2

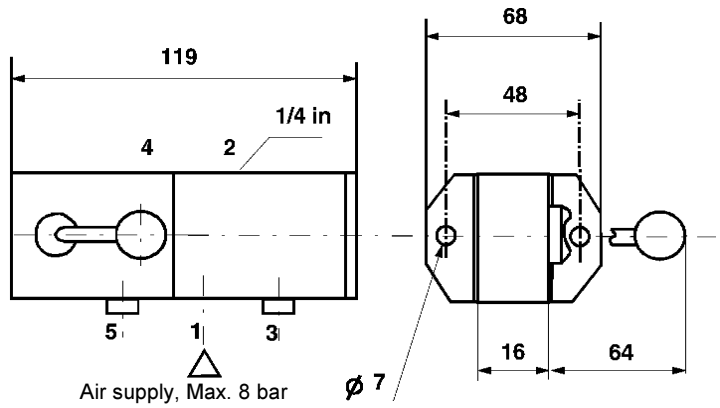


Figure 6
Air regulating valve dimensions and connections

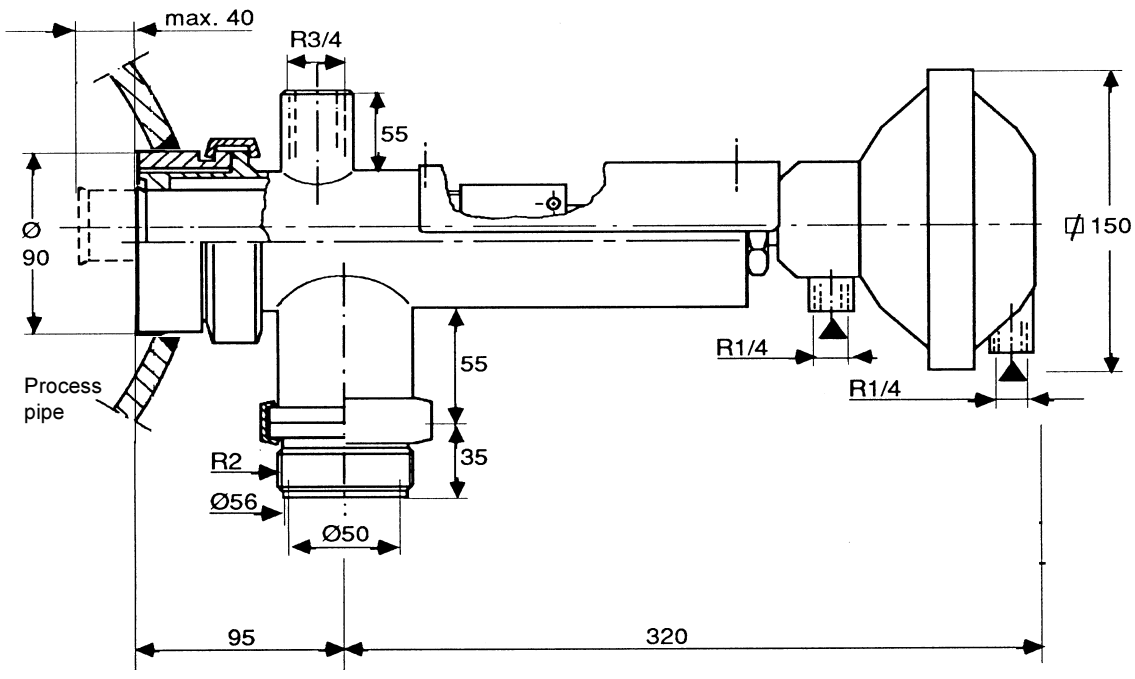
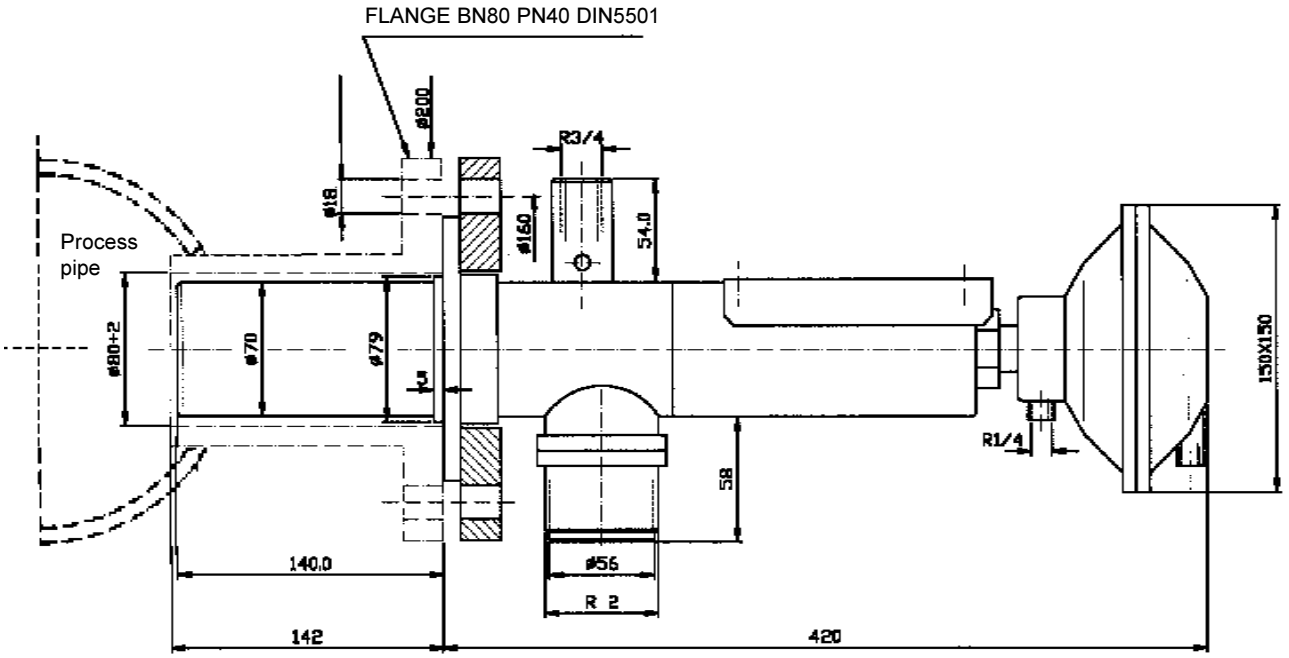


Figure 7 Dimensions for NOVE HSxxx1 - Process coupling, seal and mountings are supplied with sampler

Metal coupling (NOVE HFx0xx)
- Seal, screws and nuts are supplied with sampler.
(Metal flanged process coupling is not supplied with sampler.)



Fiberglass-reinforced plastic coupling (NOVE HFx8xx)
- Coupling, seal, mounting bolts and nuts are supplied with sampler

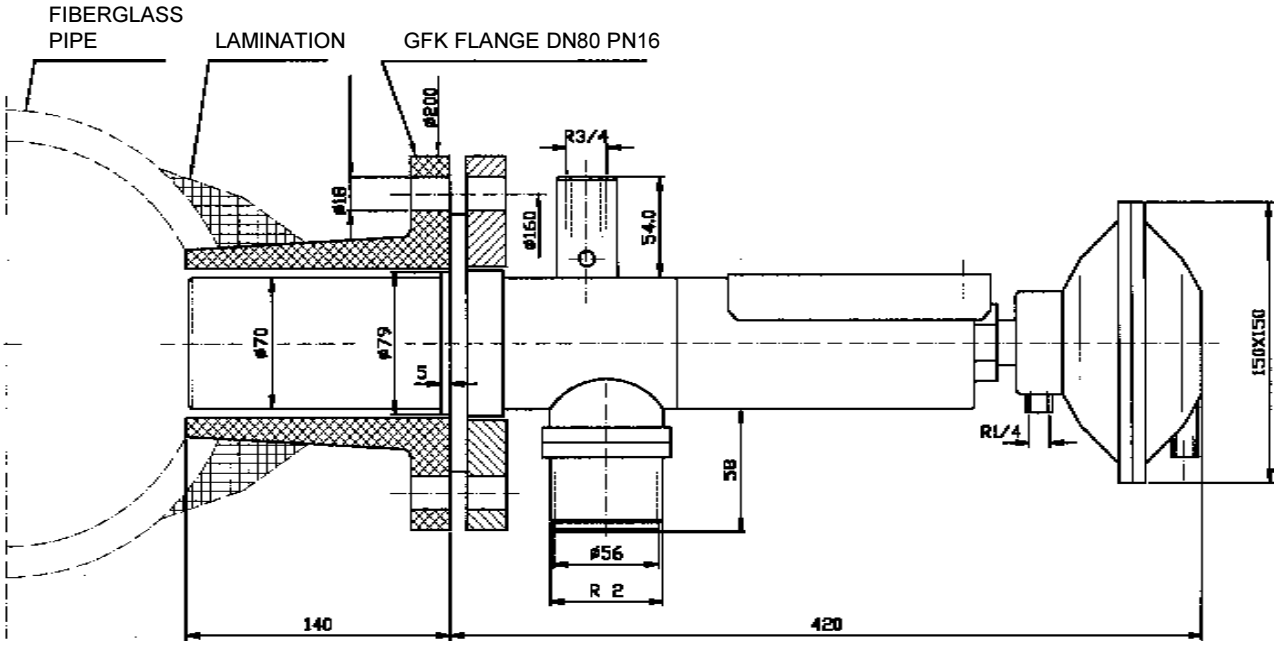


Figure 8 Samplers mounted on flanged coupling (NOVE HFxxxx)

NOTE: Manufacturer reserves the right to make technical changes without prior notice.