



Operating Manual Festec FNS Series hydraulic nut splitter

Maximum operating pressure 700 bar

1.0 Important receiving instructions:

Visually inspect all components for shipping damage. If any shipping damage is found, notify carrier at once. Shipping damage is NOT covered by warranty. The carrier is responsible for all repair or replacement costs resulting from damage in shipment.

SAFETY FIRST!

Read all instructions, warnings and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation. FESTECC cannot be responsible for damage or injury resulting from a unsafe use of product, lack of maintenance or incorrect product and/or system operation. Contact FESTECC for guidance when in doubt as to the safety precautions and applications.

2.0 General safety issues:



WARNING: To avoid personal injury, always wear proper personal protective gear when operating hydraulic equipment.

WARNING: To avoid injuries and possible damage to the nut splitter, do not use the nut splitter on glass, plastic, wood or any other material which would shatter.



CAUTION: To prevent personal injury, do not place fingers on or near the cutting area while nut splitter is operating.

CAUTION: FESTECC FNS series nut splitters are designed specially to split metal nuts specified in table 1 on page 5. Maximum allowable hardness to be split is HRc 44. For materials not specified in this instruction sheet, please contact FESTECC.



CAUTION: To avoid personal injury and damage to the nut splitter parts:

- do not cut chains. Do not cut bolts.
- do not use the nut splitter to rotate nuts (see illustration 2 on page 4).
- do not move nut splitter during cutting operation (see illustration 2 on page 4).
- do not heat up nuts while the nut splitter is in position.



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3.0 Product description

All Festec FNS nut splitters are single acting, hydraulic advance – spring return. Hydraulic nut splitters can be powered by a hydraulic pumps. The nut splitter consist of a two piece threaded body, the cutting blade, return spring, plunger, oil seal and a coupler (see illustration 5 on page 4). One spare cutting blade is delivered with each nut splitter.

4.0 Technical specifications

See table 1 en 2 on page 5.

5.0 Operation and installation

- 5.1 Connect the nut splitter coupler to the hose coupler and pump. Firmly tighten couplers by hand to prevent restricted oil flow.
- 5.2 Read the operation manual of the hydraulic pump before use.
Open the vent/fill plug of the pump.
- 5.3 Close the pump release valve. To remove air trapped in the hydraulic system, operate the pump to advance and retract the splitter blade several times.
- 5.4 Place the nut splitter over the nut. The flat surface of the nut splitter must rest against one of the nut flats (see illustration 3 and 4 on page 4).

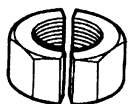
Caution: The cutting blade must not cut a hardened washer or spring washer (see illustration 3 on page 4).

Warning: Improper positioning of the nut splitter on the nut may cause damage to the cutting blade. Make sure it is well positioned (see illustration 3 en 4 on page 4).

- 5.5 Hold nut splitter in position, operate pump until cutting blade cuts through the nut. Avoid damage to the bolt thread by stopping the pump as soon as the nut is split. Stop pump by opening the release valve to retract the cutting blade. Lift the nut splitter off the nut.

Warning: To prevent personal injury do not place fingers in the cutting area.

- 5.6 If you can not remove the nut after one cut, reposition the nut splitter to the side opposite (180 °) the split.



RECOMMENDATION: When cutting stainless steel or hardened steel nuts apply a suitable cutting fluid. The cutting fluid will help reduce splitter blade wear and breakage.

- 5.7 When ready with the job, replace the dustcaps to all couplers.



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6.0 Maintenance and disassembling of the nut splitter

Before disassembling nut splitters: **WARNING: Nut splitter is spring loaded.** To avoid personal injury be careful when disassembling. Do not remove the spring.

Hydraulic nut splitters require periodic maintenance. Disassemble the product, clean and lubricate all parts prior to assembling. FESTEC offers ready-to-use spare parts kits for repair and replacement (see page 7). See page 6 for the complete spare parts list per type nut splitter. Contact FESTEC for more details.

Opmerking: The pretensioned spring is kept in position by the key in the plunger. To replace this spring special tooling is needed. In this case the nut splitter must be returned to FESTEC. The spring is not available as a spare part.

6.1 Use under water

When nut splitter is used under water or in severe conditions, disassemble, clean and lubricate all parts immediately. Repaint, if necessary. If frequently used under water repaint the nut splitter with light coloured corrosion resistant paint.

6.2 Cutting blade removal / replacement

Sharp cutting blades will prolong the life of your nut splitter. Replace damaged cutting blades. Blades can be resharpened by grinding, but avoid removing more than 1,5 mm (1/16") of material. Nicks can be removed by a grinding stone.

CAUTION: Do not change the cutting angle!

6.3 How to replace a cutting blade (see illustration 5 on page 4)

Note: To remove the cutting blade you do not need to disassemble the nut splitter, just follow steps below:

1. Open the pump release valve to remove hydraulic pressure. Cutting blade to be fully extended.
2. Disconnect the nut splitter from the hose.
3. Remove setscrew nr. 8.
4. Remove setscrew nr. 9.
5. Pull out cutting blade nr. 5.
6. Inspect the blade edge and shaft for cracks, nicks and overall sharpness.
7. Resharp the cutting blade (see par. 6.2) or replace it when the cutting blade is in bad condition.
8. Lubricate the cutting blade and insert the blade into the splitter body with the cutting angle sloping away from the body.
9. Install setscrew nr. 9 and tighten. Insert setscrew nr. 8 and tighten.
10. Connect the nut splitter and hose. Check nut splitter operation by advancing and retracting the blade several times.
11. Check pump fluid level and add hydraulic oil as required.

OUR ADVICE: keep always spare blades on hand during operation!

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Illustration 1

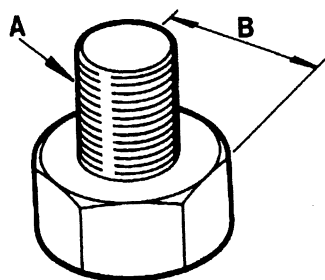


Illustration 2

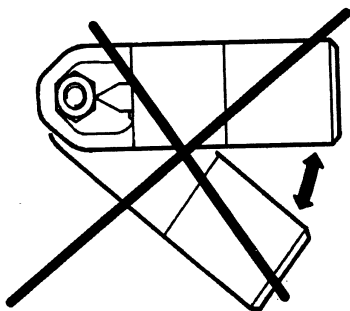


Illustration 5

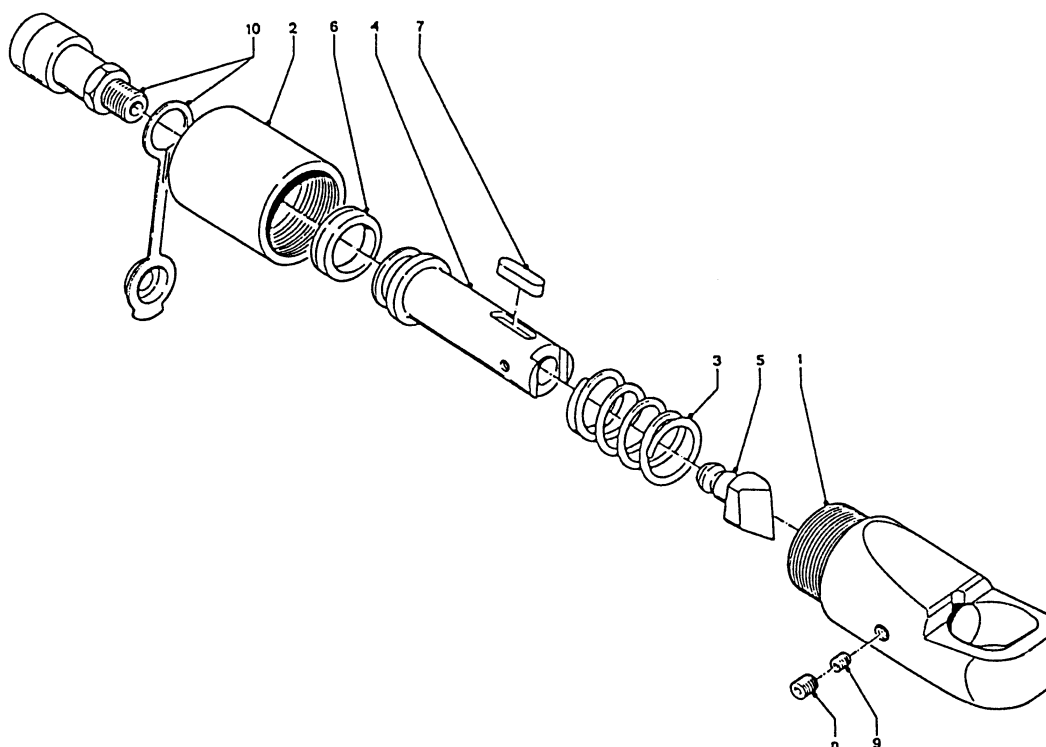


Illustration 3

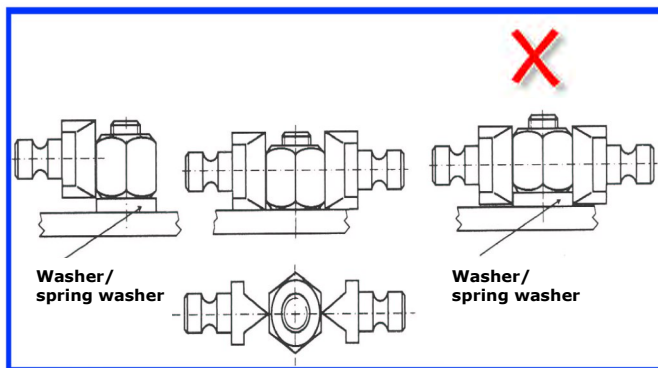
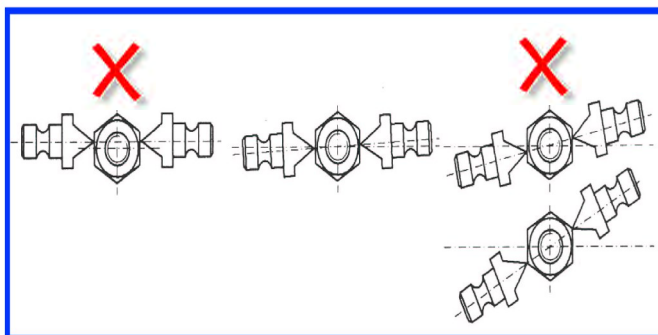


Illustration 4





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Festec FNS Series hydraulic nut splitter

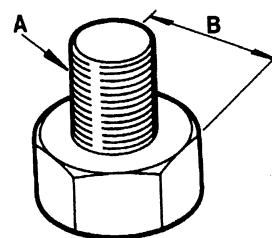
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Table 1 - Dimensions of the nuts.

Festec art.no.	Hexagon nut range	Bolt range	Nut range in inch	Capacity (in tons)
FNS-1319	13 - 19 mm	M6 - M12	1/2" - 3/4"	5
FNS-1924	19 - 24 mm	M12 - M16	3/4" - 15/16"	10
FNS-2432	24 - 32 mm	M16 - M22	15/16" - 1 1/4"	15
FNS-3241	32 - 41 mm	M22 - M27	1 1/4" - 1 5/8"	21
FNS-4150	41 - 50 mm	M27 - M33	1 5/8" - 2"	33
FNS-5060	50 - 60 mm	M33 - M39	2" - 2 3/8"	48
FNS-6075	60 - 75 mm	M39 - M48	2 3/8" - 2 5/16"	93
FNS-7590	75 - 90 mm	M48 - M60	2 15/16" - 3 1/2"	93
FNS-90105	90 - 105 mm	M60 - M72	3 1/2" - 4 1/4"	125
FNS-105145	105 - 145 mm	M72 - M100	4 1/4" - 5 3/4"	-
FNS-150175	150 - 175 mm	M100 - M125	5 3/4" - 6 7/8"	-

Table 2 - Specifications of the nuts.

Nut category DIN ISO 898	Bolt class	SAE-Class J 429	ASTM-Class
4 of 5	4,6	1	A193, B8, A307, class A
4 of 5	4,8	1	—
5	5,8	2	—
8	8,8	5	A325, A449
9	9,9	5+	A193, B7, B16
10 of 12	10,9	8	A490, A354, class 8B
10 of 12	12,9	—	A540, B21, B24



Maximum allowable hardness to split is: HRc 44 (429 HV 30)
 Nominal hardness of the bolt in the category 12 HRc 35 (341 HV B24)

Replacement parts Festec FNS Series nut splitters - article numbers

	FNS-1319	FNS-1924	FNS-2432	FNS-3241	FNS-4150	FNS-5060	FNS-6075	FNS-7590	FNS-90105	FNS-105145	FNS-150175
1 Head	90201319010	90201924010	90202432010	90203241010	90204150010	90205060010	90206075010	90207590010	902090105010	9020105145010	9020150175010
2 Cylinder	90201319030	90201924030	90202432030	90203241030	90204150030	90205060030	90206075030	90207590030	902090105030	9020105145030	9020150175030
3 Spring	90201319090	90201924090	90202432090	90203241090	90204150090	90205060090	90206075090	90207590090	902090105090	9020105145090	9020150175090
4 Plunger	90201319020	90201924020	90202432020	90203241020	90204150020	90205060020	90206075020	90207590020	902090105020	9020105145020	9020150175020
5 Cutting blade	FNS-M1319	FNS-M1924	FNS-M2432	FNS-M3241	FNS-M4150	FNS-M5060	FNS-M6075	FNS-M7590	FNS-M90105	FNS-M105145	FNS-M150175
6 Sealing	90201319081	90201924081	90202432081	90203241081	90204150081	90205060081	90206075081	90207590081	902090105081	9020105145081	9020150175081
7 Pin	20006885006	2000688500601	200006885008	20006885008	20006885010	20006885010	20006885010	20006885014	20006885014	20006885018	20006885018
8 Set screw	20000913005	20000913006	20000913008	2000091300801	200091300802	2000091301001	2000091301001	2000091301001	2000091301001	2000091301001	2000091301001
9 Set screw	20000913008	20000913010	20000913012	20000913012	20000913012	20000913014	20000913014	20000913014	20000913014	20000913014	20000913014
10 Coupler +dustcap	8820038022 / 8820038025	8820038022 / 8820038025	8820038022 / 8820038025	8820038022 / 8820038025	8820038022 / 8820038025	8820038022 / 8820038025	8820038022 / 8820038025	8820038022 / 8820038025	8820038022 / 8820038025	8820038022 / 8820038025	8820038022 / 8820038025
Cutting blade kit	90201319050	90201924050	90202432050	90203241050	90204150050	90205060050	90206075050	90207590050	902090105050	9020105145050	9020150175050
Repair kit	90201319060	90201924060	90202432060	90203241060	90204150060	90205060060	90206075060	90207590060	902090105060	9020105145060	9020150175060
Sealing kit	90201319070	90201924070	90202432070	90203241070	90204150070	90205060070	90206075070	90207590070	902090105070	9020105145070	9020150175070
Installation aid	90201319080	90201924080	90202432080	90203241080	90204150080	90205060080	90206075080	90207590080	902090105080	9020105145080	9020150175080
Aluminium carry case	90201319091	90201924091	90202432091	90203241091	90204150091	90205060091	90206075091	90207590091	902090105091	9020105145091	9020150175091
Foam-insert for carry case	90201319095	90201924095	90202432095	90203241095	90204150095	90205060095	90206075095	90207590095	902090105095	9020105145095	9020150175095



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Cutting blade kit, consists of:

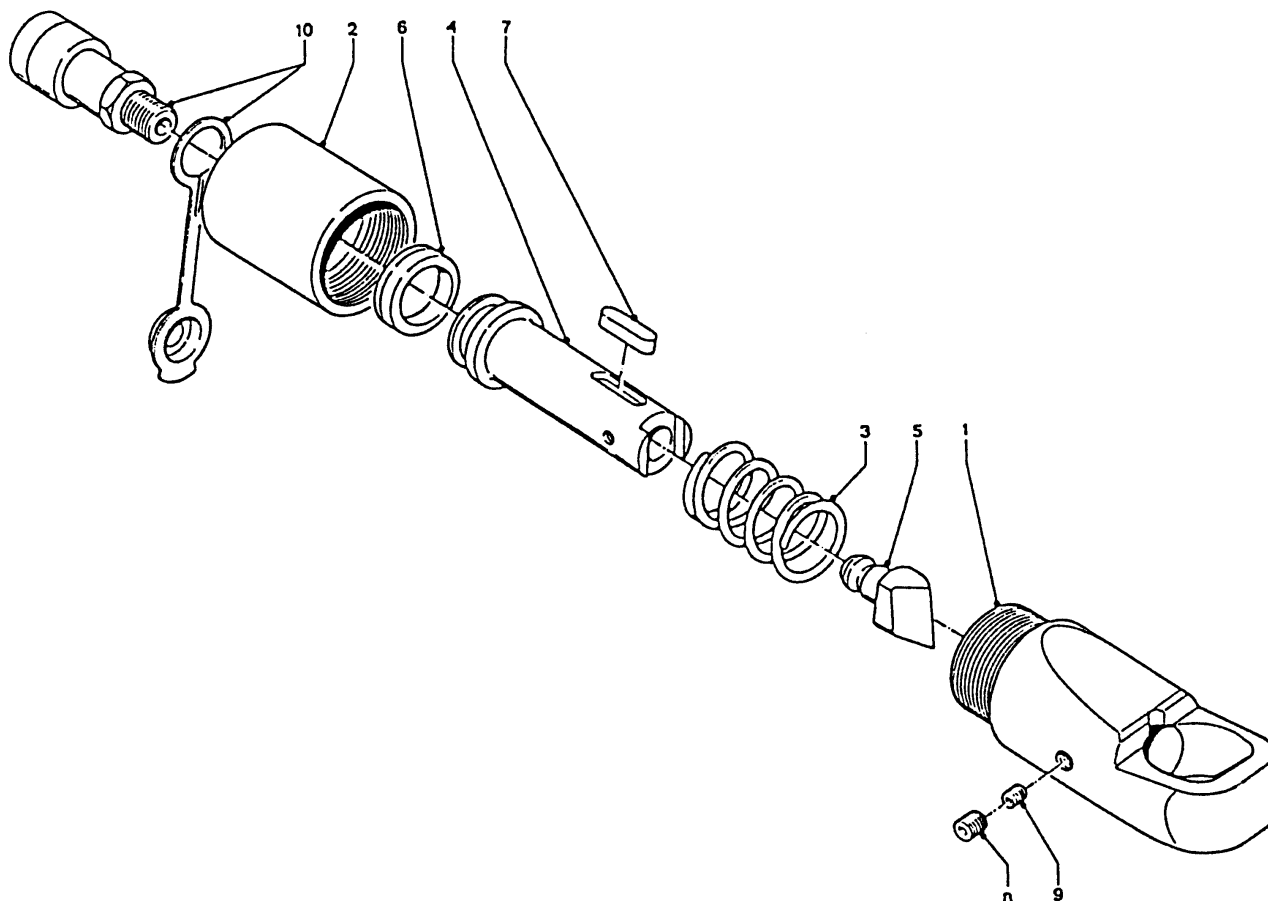
- cutting blade
- allen screw
- allen screwdriver
- minigrip bag

Repair kit, consists of:

- cutting blade
- allen screw
- allen screwdriver
- sealing
- installation aid
- minigrip bag

Sealing kit, consists of:

- sealing
- installation aid
- minigrip bag



Dimensions Festec FNS Series nut splitters

Dimensions in mm	A	B	C	D	F	Weight (kg)
Festec art.no.						
FNS-1319	40	49	7	19	28	1,2
FNS-1924	54	61,5	10	26	40	2,0
FNS-2432	64	76	13	29	51	3,0
FNS-3241	75	86	17	36	66	4,4
FNS-4150	94	106	21	45	74	8,2
FNS-5060	106	124,5	23	54	90	11,8
FNS-6075	156	183	26	72	110	34,1
FNS-7590	186	212	30	95	127	73,0
FNS-90105	210	245	33	105	147	99,5
FNS-105145	280	323	34	140	184	120,0
FNS-150175	338	390	40	175	220	180,0

