PADIMA	Instruction Sheet Hydraulic Nut Splitters	MSP

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 Information

To avoid personal injury or property damage during system operation, read an followall CAUTIONS, WARNINGS and INSTRUCTIONS included with or atteched to each product. PADIMA CANNOT BE RESPONSIBLE FOR DAMAGE OR INJURYRESULTING FROM UNSAFE USE OF PRODUCT, LACK OF MAINTENANCE, OR INCORRECT PRODUCT AND SYSTEM APPLICATION. Contact PADIMA when in doubt as to applications and safety precautions.

WARNING

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

WARNING

The system operating pressure must not exceed the pressure rating of the lowest rated component in the system.

WARNING

Make sure that all system components are protected from external sources of damage, such as excessive heat, flame, moving machine parts, sharp edges and corrosive chemicals.

WARNING

To prevent injury, do not place fingers on or near the cutting blade while the nut splitter ist operating.

WARNING

To prevent injuries and avoid damage to the cutters, do not use the nut splitter on glass, plastic, wood or any other material which could shatter.

CAUTION

To avoid damage to the nut splitter blade, housing,plunger and seals :

- Do not cut chains or bolts
- Do not use the nut splitter to rotate nuts
- Do not move the nut splitter during the cutting operation
- Do not heat up nuts while the nut splitter is in position

CAUTION

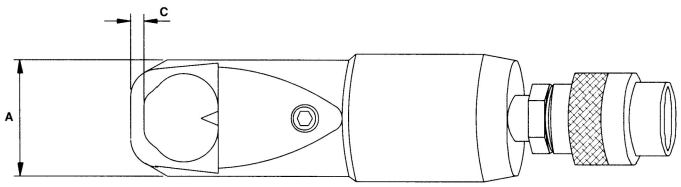
Padima nut splitters are designed specifically for metal nuts which match sizes shown in the specifications chart (max. allowable hardness of nuts to be split is HRc-44). For materials and sizes not specified, contact Padima Technical Services.

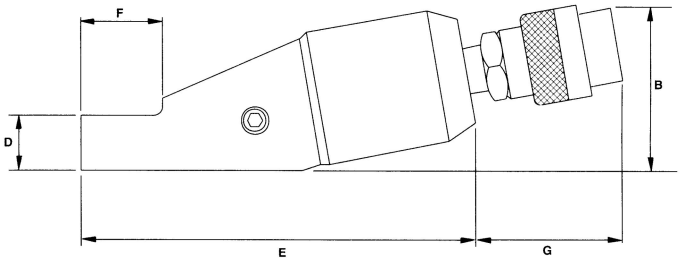
Instruction Sheet
Hydraulic Nut Splitters

MSP

DESCRIPTION

All PADIMA nut splitters are single-acting, hydraulic-advance, spring-return units. Hydraulic power can be supplied by hand, electric or air-powered pumps capable of 10.000 psi output pressure.
PADIMA nut splitters consist of a two-piece threaded body, cutting blade, return spring, plunger, oil seal and K1 coupler half. Spare setscrews, a spare blade and wrenches for removing and replacing the blade, are included with the nut splitter. Each blade is made of high quality steel and can be re-sharpened using a grinding tool.





Specifications - Dimensions in Inches (mm)

Model No.	Bolt Range in. (mm)	Nut Range in. (mm)	Cap. (tons)	Weight lb (kg)	A	B	C	D	E	F	G
1319	5/16 - 1/2 (M6-M12)	1/2 - 3/4 (13-19)	5	2.6 (1.2)	1.57 (40)	1.89 (48)	.24 (6)	.75 (19)	4.69 (119)	1.10 (28)	3.90 (99)
1924	1/2 - 5/8 (M12-M16)	3/4 - 15/16 (19-24)	10	4.4 (2.0)	2.17 (55)	2.80 (71)	.32 (8)	.98 (25)	6.02 (153)	1.50 (38)	2.36 (60)
2432	5/8 - 7/8 (M16-M22)	15/16 - 1 1/8 (24-32)	15	6.6 (3.0)	2.60 (66)	2.99 (76)	.39 (10)	1.22 (31)	6.81 (173)	1.93 (49)	2.36 (60)
3241	7/8 - 1 1/8 (M22-M27)	1 1/8 - 1 9/16 (32-41)	20	9.7 (4.4)	2.95 (75)	3.50 (89)	.59 (15)	1.38 (35)	8.39 (213)	2.60 (66)	2.36 (60)
4150	1 1/8 - 1 3/8 (M27-M33)	1 9/16 - 2 (41-50)	35	18.1 (8.2)	3.78 (96)	4.29 (109)	.71 (18)	1.77 (45)	9.61 (244)	2.87 (73)	2.36 (60)
5060	1 3/8 - 1 1/2 (M33-M39)	2 - 2 1/4 (50-60)	50	26.0 (11.8)	4.17 (106)	4.96 (126)	.71 (18)	2.13 (54)	11.73 (298)	3.46 (88)	2.36 (60)
6075	1 1/2 - 1 7/8 (M39-M43)	2 3/8 - 2 7/8 (60-75)	56	75.1 (34.1)	6.14 (156)	7.13 (181)	.79 (20)	2.84 (72)	13.78 (350)	4.33 (111)	2.36 (60)

PADIMA	Instruction Sheet Hydraulic Nut Splitters	MSP

OPERATION

1. Connect the nut splitter coupler to the hose coupler.
2. Firmly tighten the couplers to prevent restricted oil flow.

NOTE: Pump vent/fill cap must be in the "VENT" position for proper pump functioning.

3. Close the pump release valve.

NOTE: To remove air trapped in the pump, hose, or cutter, freely advance and retract the cutter blade several times.

4. Place the nut splitter head over the nut.

NOTE: The flat surface of the cutter must rest flush against one of the nut flats, and the head must rest on a flat surface. See Figure 1 for correct and incorrect placements.

CAUTION

Improper placement of the nut splitter on the nut may cause the head to fail.

POSITIONING THE CUTTER

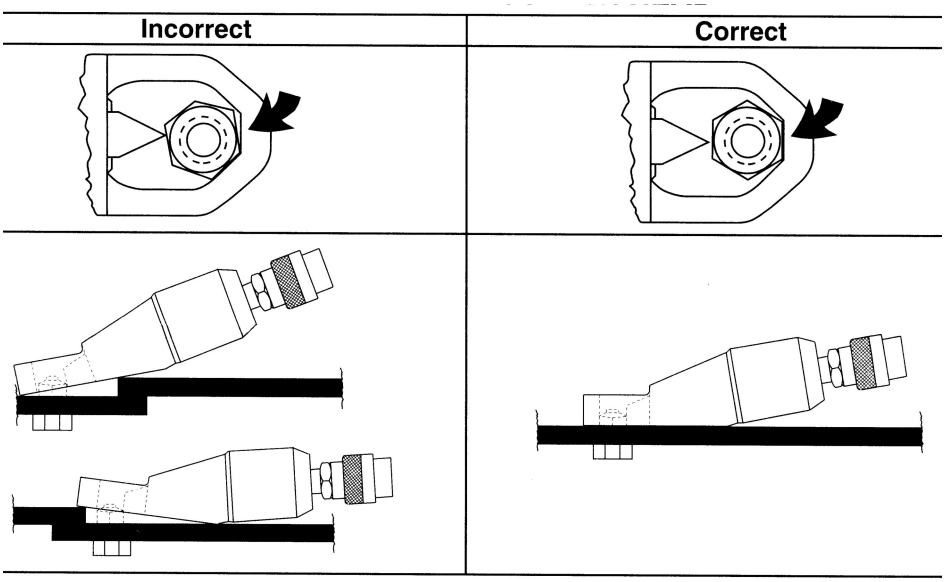


Figure 1

WARNING
To prevent injury keep fingers away from the cutter blade during splitting operations.

5. Hold the nut splitter in proper position.
6. Operate the pump until the cutter blade cuts through the nut.

NOTE: To avoid damage to the bolt thread, turn off the pump as soon as the nut is split. See Figure 2 for correct cutter blade stopping point.

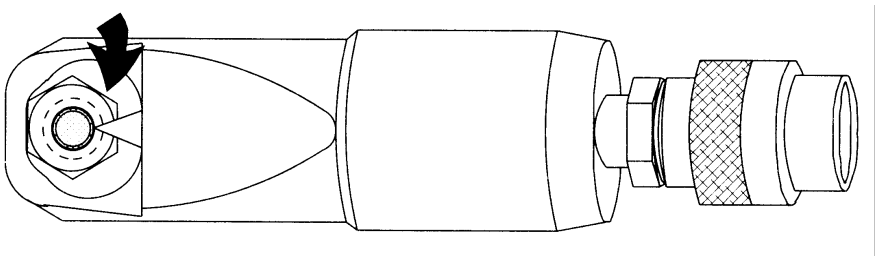


Figure 2

7. Open the pump release valve to retract the cutter blade.
8. Lift the nut splitter off the split nut.
9. Repeat the cutting process on the other side of the nut (180° from the first cut).
10. Once the nut is completely split, retract the cutting blade.
11. Remove the nut splitter and split nut.

NOTE: Apply a suitable cutting fluid to stainless steel and hardened steel nuts before splitting to reduce cutter blade wear and breakage.

BLADE REMOVAL/REPLACEMENT

1. Open the pump release valve to remove hydraulic pressure from the nut splitter.
2. Disconnect the hose and nut splitter coupler halves.
3. Remove the setscrew from the side of the nut splitter body.
4. Remove the smaller setscrew from the same hole in the side of the nut splitter body.
5. Note the position of the blade angle for correct installation later.
6. Pull the blade out of the cutter body.
7. Inspect the blade egde for cracks, large nicks and sharpness.
8. Replace the blade if it is damaged.

NOTE: The edge can be resharpened, but avoid removing more than 1/16 " of material and maintain the original cutting angle.

9. Apply a coat of grease to the blade shaft.
10. Insert the blade shaft-first into the cutter body..
11. Align the blade to the position noted in step. 5.
12. Insert the small setcrew and tighten.
13. Insert the larger setscrew and tighten firmly.
14. Connect the cutter and hose couplers.
15. Check cutter operation by advancing and retracting the blade several times.

PADIMA	Instruction Sheet Hydraulic Nut Splitters	MSP

1.0 Important receiving instructions

Visually inspect all components for shipping damage. If shipping damage is found notify carrier at once. Shipping damage is not covered by warranty. The carrier is responsible for all repair and 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. PADIMA cannot be responsible for damage or injury resulting from unsafe use of product, lack of maintenance or incorrect product and/or system operation. Contact PADIMA for guidance when in doubt as to the safety precautions and applications.

TO PROTECT YOUR WARRANTY, ONLY USE PADIMA HYDRAULIC OIL !

2.General safety issues

2.1 WARNING: To prevent personal injury, always wear eye protection Whenever operating hydraulic nut cutters.

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

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

2.4 Caution: PADIMA nut cutters are designed specially to split metal nuts specified in table 1. Maximum allowable hardness to be split is HRc 44. For materials not specified in this instruction sheet, contact. PADIMA.

2.5 Caution : To avoid personal injury and damage to the nut cutter parts :

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

3.0 Product description

All PADIMA MSP-nut cutters are singe acting, hydraulic advance – spring return. Hydraulic nut cutters can be powered by PADIMA pumps. The nut cutter consist of a two piece threaded body, the cutting blade, return spring, plunger, oil seal and a coupler. See Illustration 5. One spare cutting blade is delivered with each nut cutter.

4.0 Specifications
See tables 1 and 2

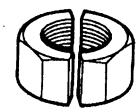
5.0 Operation / installation
5.1 Connect the nut cutter coupler to the hose coupler and pump. Firmly tighten couplers by hand to prevent restricted oil flow.
5.2 Open the vent/fill plug of the pump.
5.3 Close the pump release valve. To remove air trapped in the hydraulic system Operate the pump to advance and retract the cutter blade several times.
5.4 Place the nut cutter over the nut. The flat surface of the nut cutter must rest against one of the nut flats. See illustration 2 an 3.

CAUTION: The cutting blade must not cut a hardened washer or spring washer. See illustration 2.

WARNING: Improper positioning of the nut cutter on the nut may cause damage to the cutting blade. Make sure it is well positioned. See illustration 2 and 3.

5.5 Hold nut cutter 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 cutter 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 cutter 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 cutter blade wear and breakage.

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

6.0 Maintenance
Before disassembling nut cutters : WARNING: Nut cutter is spring loaded. To avoid personal injury be careful when disassembling. Do not remove the spring.

Hydraulic nut cutters require periodic maintenance. Disassemble the product, clean an lubricate all parts prior to assembling. PADIMA offers ready-to-use spare parts kits for repair and replacement. Repair Parts Sheet available. Contact PADIMA for more details.

NOTE: The pre-tensioned spring is kept in position by the key in the plunger. To replace this spring special tooling is needed. In this case the nut cutter must be returned to PADIMA. The spring is not available as a spare part.

6.1 Under water use
When nut cutter 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 cutter with light coloured corrosion resistant paint.

PADIMA	Instruction Sheet Hydraulic Nut Splitters	MSP

Illustration 1

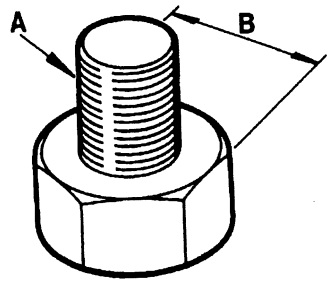


Tabelle 1 - Abmessungen der zu trennenden Muttern (Abbildung 1)

Modell Nr.	A		B	
	mm	inch	mm	inch
NC-1319	M6 - M12	1/4 - 1/2	10 - 19	.50 - .75
NC-1924	M12 - M16	1/2 - 5/8	19 - 24	.75 - .94
NC-2432	M16 - M22	5/8 - 7/8	24 - 32	.94 - 1.31
NC-3241	M22 - M27	7/8 - 1 1/8	32 - 41	1.31 - 1.60
NC-4150	M27 - M33	1 1/8 - 1 3/8	41 - 50	1.60 - 2.00
NC-5060	M33 - M39	1 3/8 - 1 1/2	50 - 60	2.00 - 2.35
NC-6075	M39 - M48	1 1/2 - 1 7/8	60 - 75	2.35 - 2.95

Illustration 4

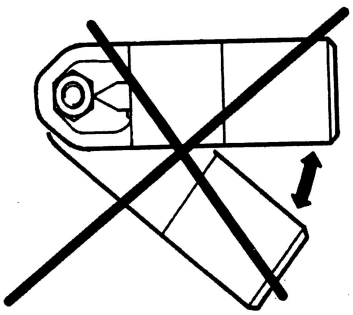


Tabelle 2 - Technische Daten der Muttern-Kategorien

Muttern-Kategorie DIN ISO 898	entsprechender Schrauben-Typ	SAE-Klassen J429	ASTM-Klassen
4 or 5	4.6	1	A193, B8, A307, Klasse A
4 or 5	4.8	1	--
5	5.8	2	--
8	8.8	5	A325, A449
9	9.9	5+	A193, B7, B16
10 or 12	10.9	8	A490, A354, Klasse 8B
10 or 12	12.9	--	A540, B21 bis B24

Maximal für die Trennung zulässige Härte: HRc 44 (429 HV 30)
Nominale Härte einer Mutter der Kategorie 12 HRc 35 (341 HV30)

Illustration 2

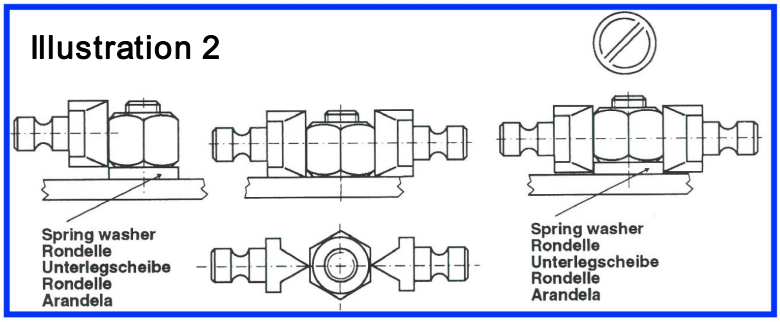
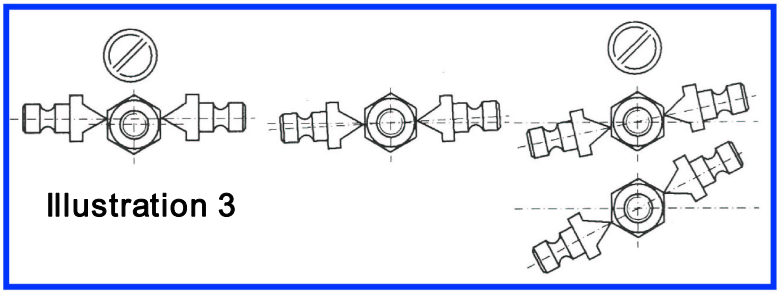


Illustration 3



6.2 Cutting blade removal / replacement
Sharp cutting blades will prolong the life of your nut cutter. Replace damaged cutting blades. Blades can be re-sharpened 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 To replace the cutting blade: see illustration 5
NOTE: To remove the cutting blade you do not need to disassemble the nut cutter.
just follow steps below.

1. Open the pump release valve to remove hydraulic pressure. Cutting blade to be fully extended.
2. Disconnect the nut cutter 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. Re-sharpen or replace cutting blade
8. Lubricate the cutting blade and insert the blade into the cutter 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 cutter and hose. Check nut cutter operation by advancing and retracting the blade several times.
11. Check pump fluid level. Add PADIMA hydraulic oil as required.

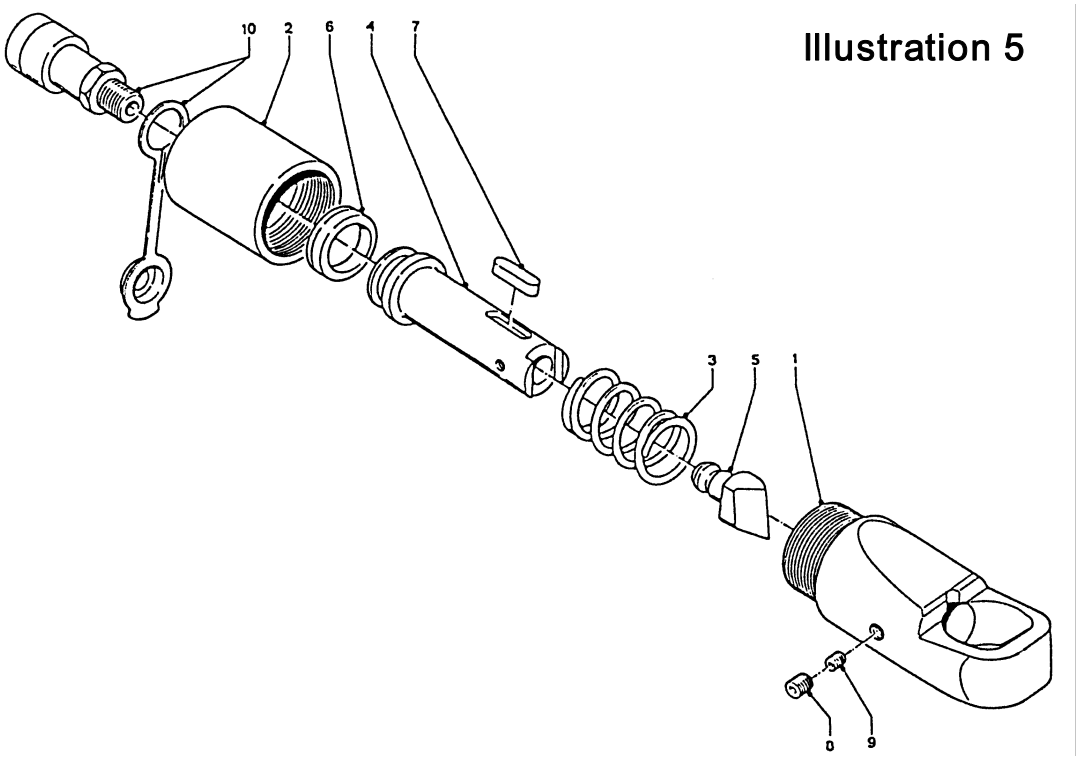


Illustration 5