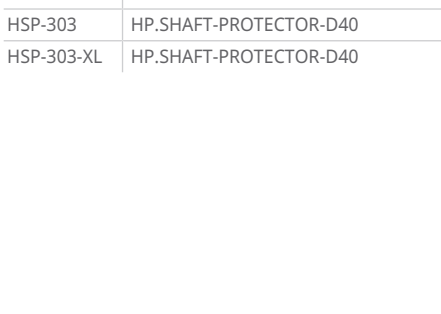
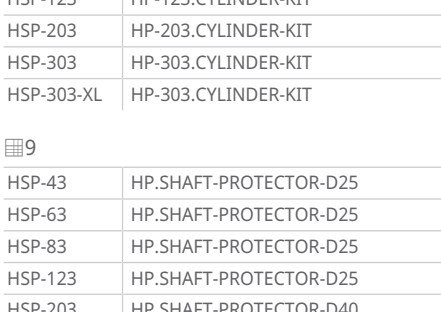
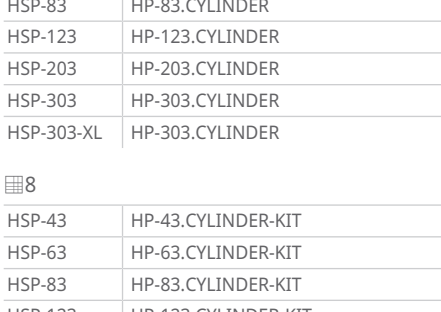
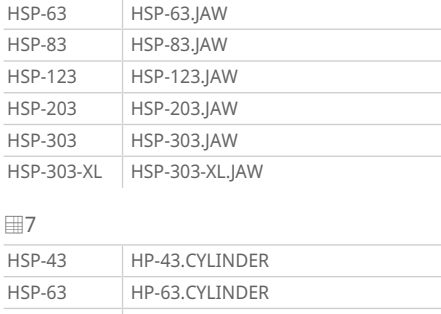
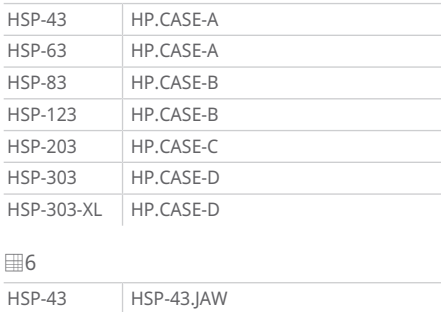
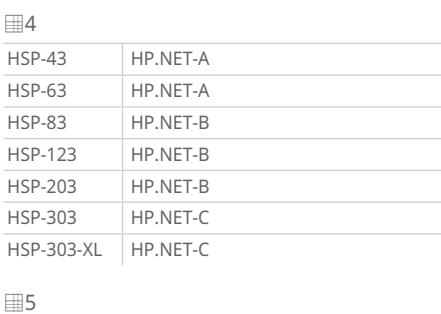
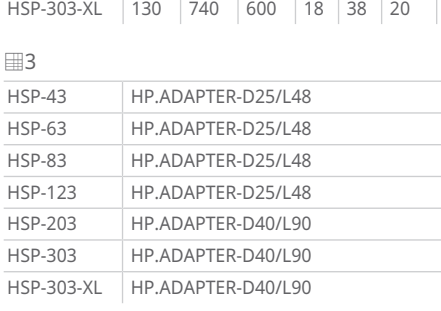
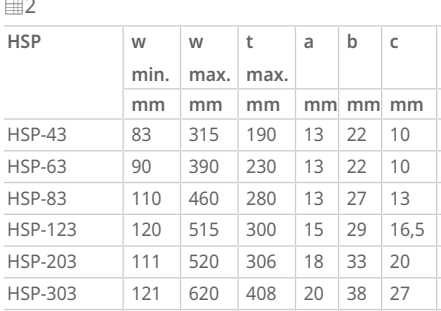
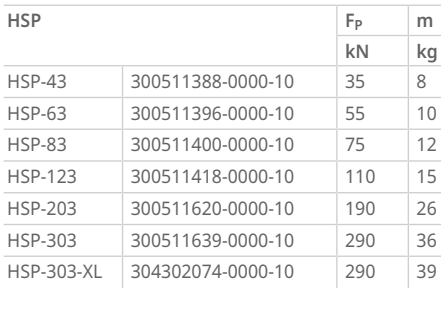
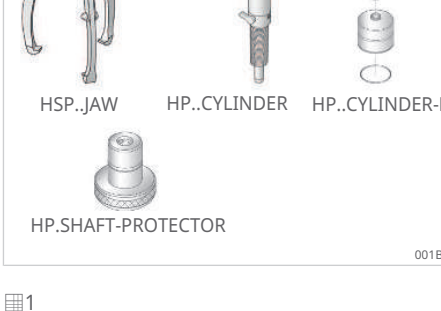
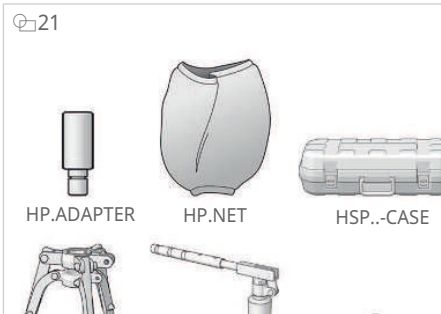
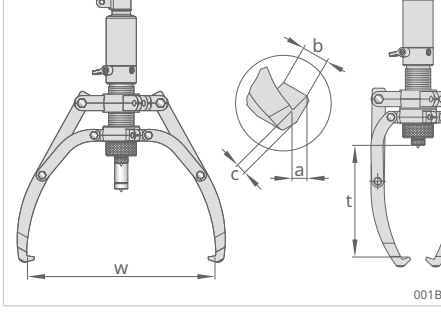
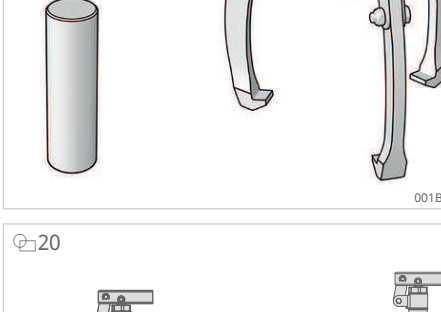
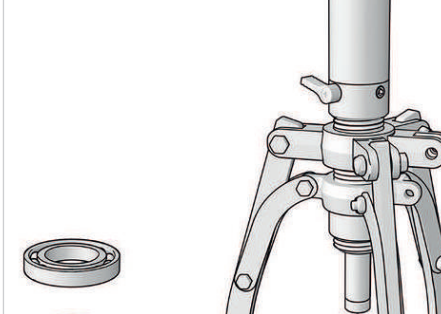
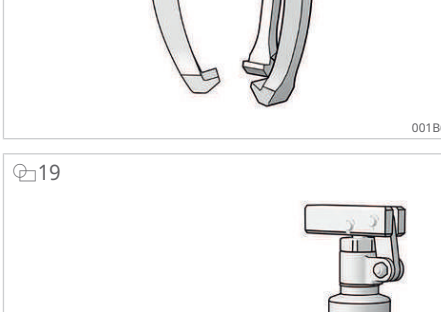
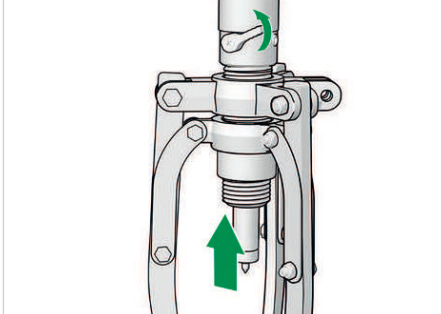
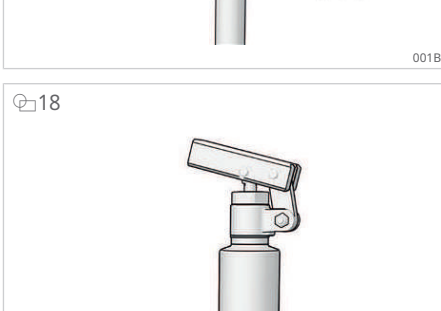
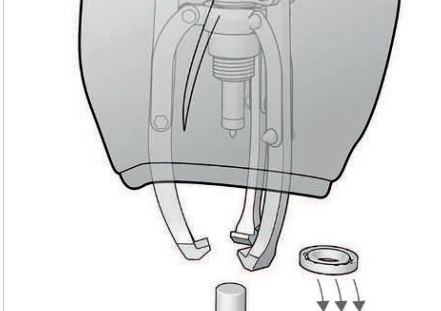
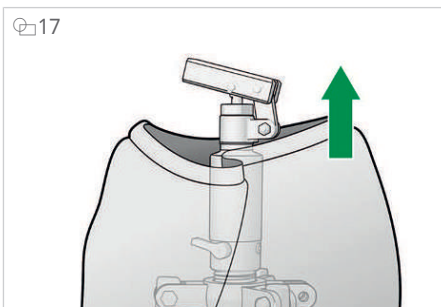
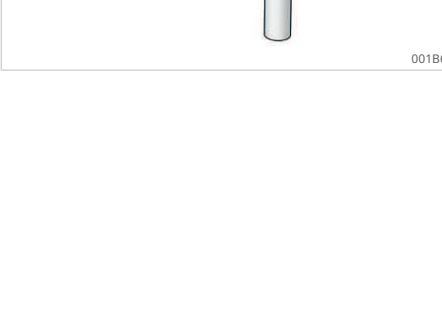
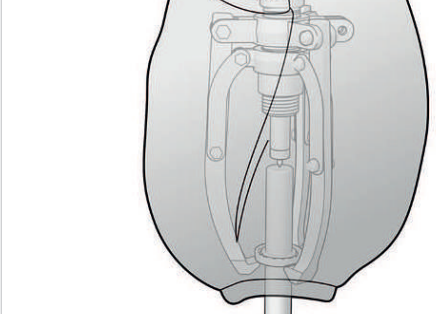
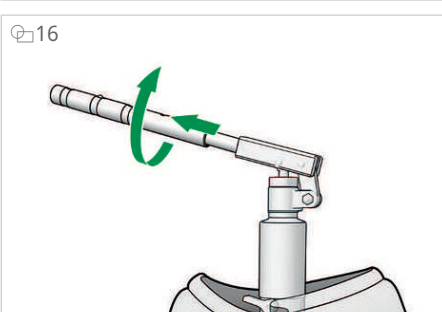
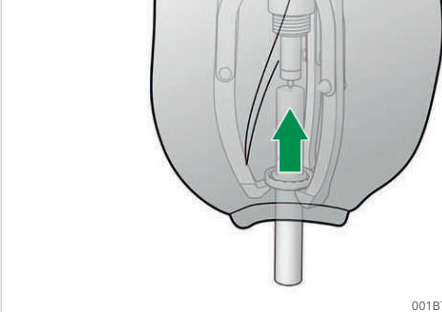
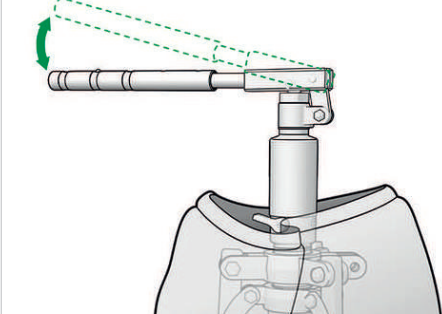
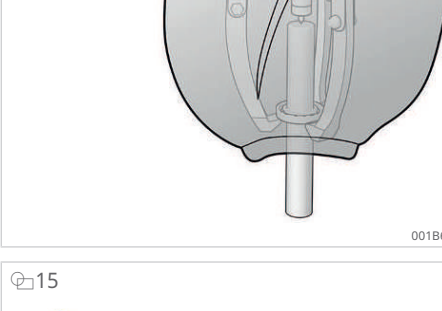
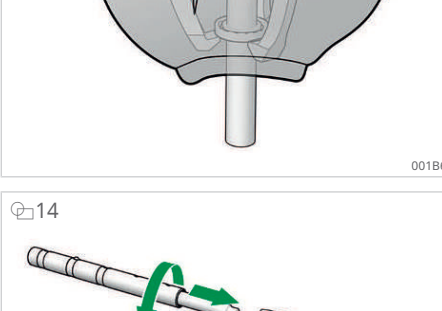
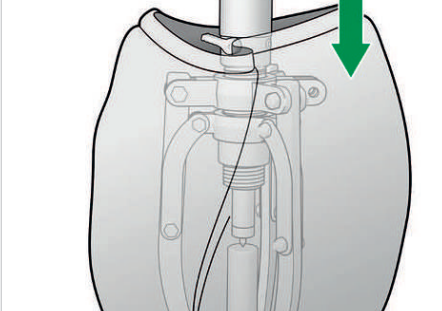
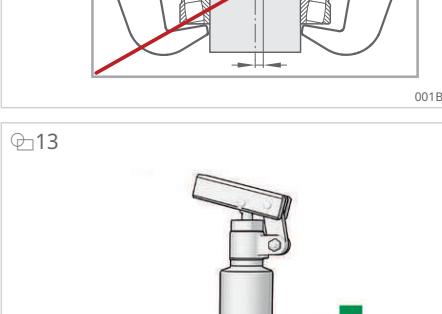
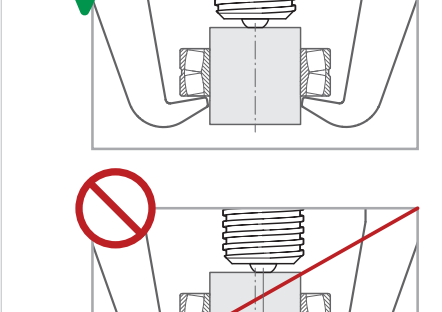
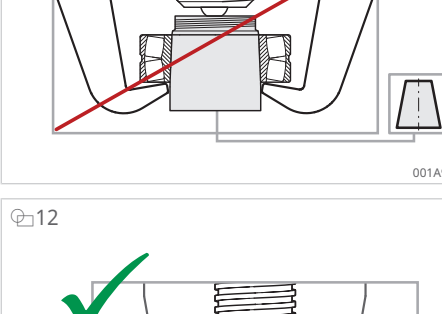
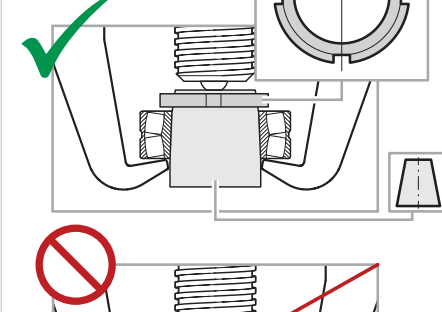
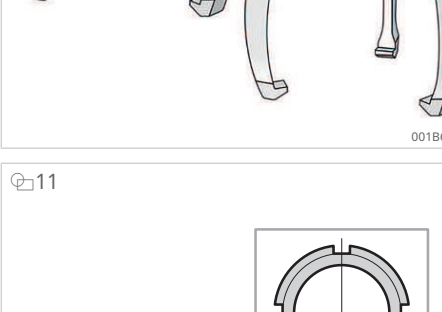
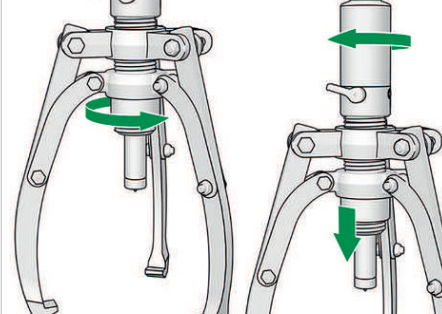
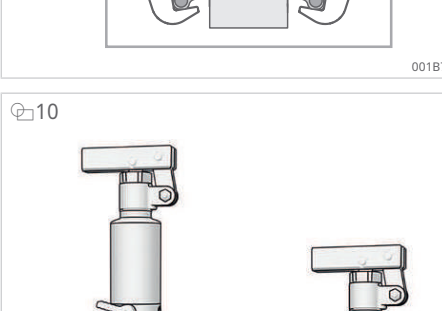
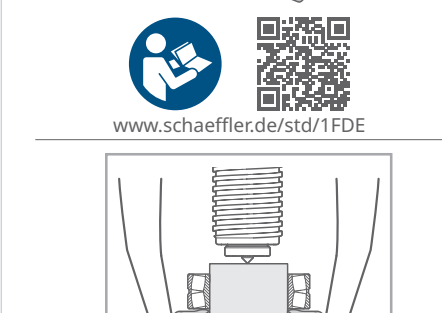
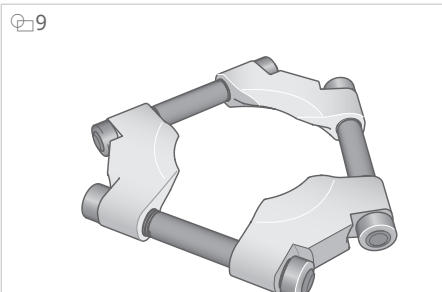
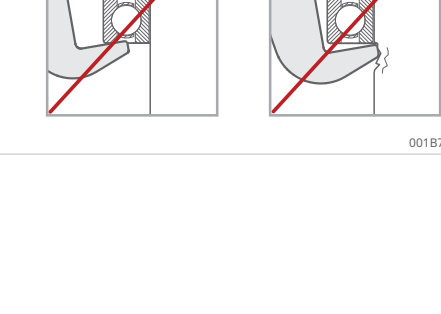
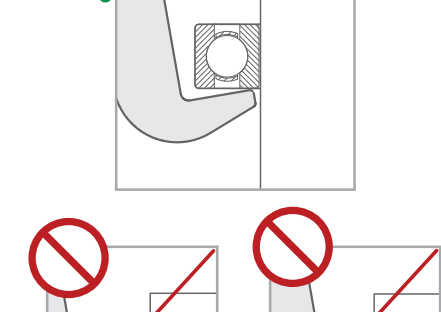
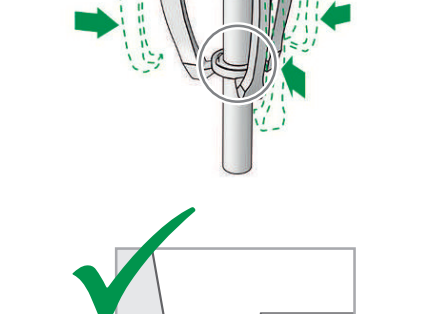
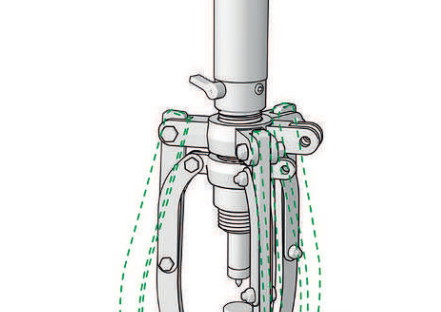
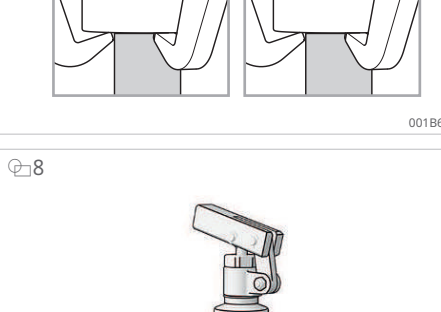
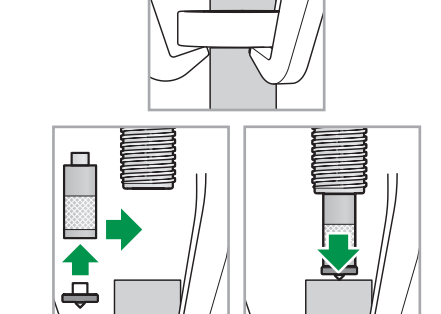
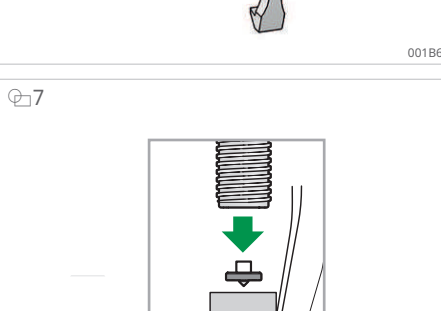
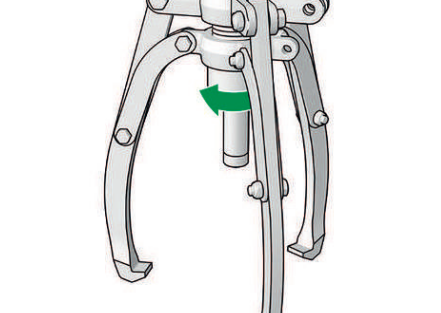
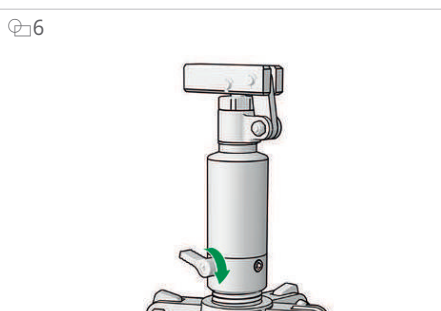
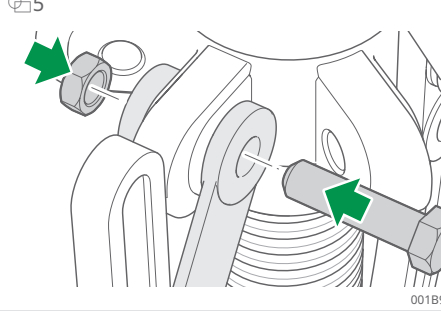
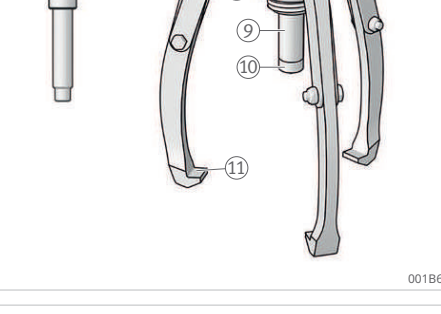
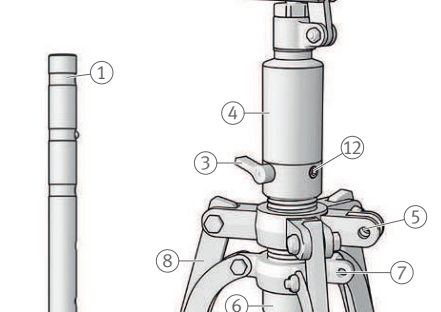
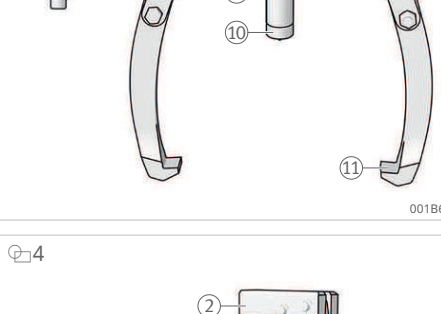
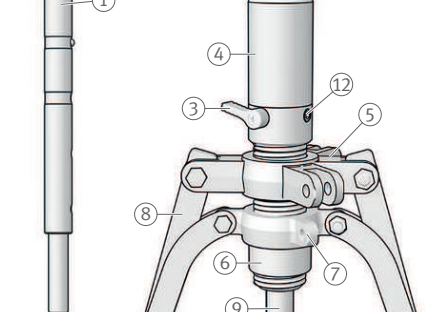
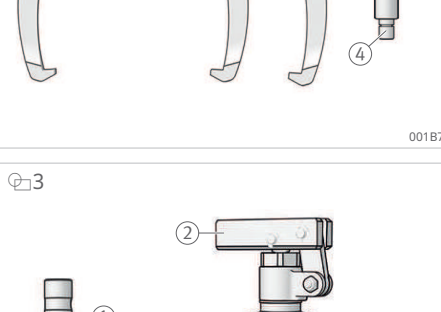
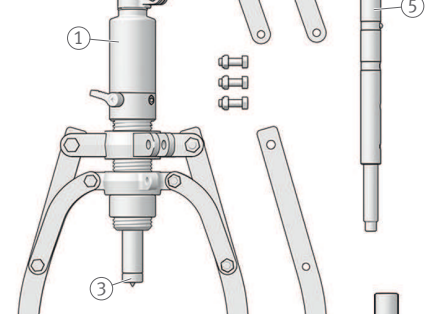
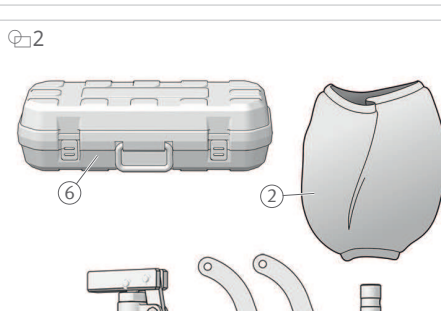
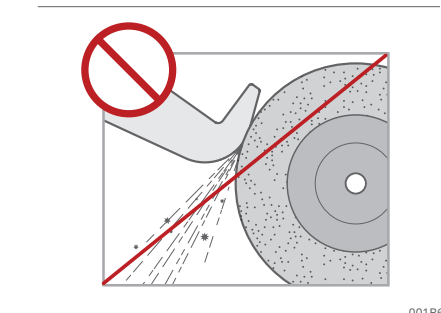




EN Hydraulic puller

HSP User Manual

1 About the manual

The original language of the manual is German. All other languages are translations from the original language.

1.1 Symbols

The warning and hazard symbols are defined in accordance with ANSI Z535.6-2011.

1.10 Warning and hazard symbols

Signs and descriptions
WARNING In case of non-compliance, death or serious injury may occur.
CAUTION In case of non-compliance, minor or moderate injury may occur.

1.2 Legal guidelines

The information in this manual reflects the status at the time of publication.
Unauthorized modifications to or improper use of the product are not permitted. Schaeffler accepts no liability in these cases.

1.3 Images

The images in this manual may be schematic representations and may differ from the delivered device.

2 General safety regulations

2.1 Intended use

The puller may only be used to dismantle pulleys, bearings, couplings and other rotationally symmetrical workpieces mounted on a shaft. The puller may only be operated in strict accordance with the technical data provided. Only use original spare parts and accessories supplied by Schaeffler.

2.2 Qualified personnel

Obligations of the operator:

- Ensure that only qualified and authorised personnel perform the activities described in this manual.
- Ensure that personal protective equipment is used.

Qualified personnel must:

- Ensure adequate product knowledge, e.g. through training on proper handling and use of the product
- be fully familiar with the contents of this manual, particularly all safety instructions
- be aware of any relevant country-specific regulations

3 Scope of delivery

►►2 Scope of delivery HSP

- 1 HSP (1x)
- 2 Safety net or safety blanket (1x)
- 3 Centring piece (1x)
- 4 Adapter piece (1x to 4x, depending on the size)
- 5 Pump lever (1x)
- 6 Case (1x)

4 Commissioning

The puller can be used with 2 or 3 arms. For a more evenly distributed pulling force, the 3-arm configuration is recommended.

✓ Ensure that the device shows no signs of damage.

- Fit 2 or 3 arms, following the illustrations provided.

►►3 Configuration with 2 arms

- 1 Pump lever
- 2 Integrated hydraulic hand pump
- 3 Switching valve
- 4 Hydraulic cylinder
- 5 Upper star
- 6 Knurled nut
- 7 Lower star
- 8 Arm
- 9 Piston
- 10 Centring piece
- 11 Pulling jaws
- 12 Filler nozzle

►►4 Configuration with 3 arms

- 1 Pump lever
- 2 Integrated hydraulic hand pump
- 3 Switching valve
- 4 Hydraulic cylinder
- 5 Upper star
- 6 Knurled nut
- 7 Lower star
- 8 Arm
- 9 Piston
- 10 Centring piece
- 11 Pulling jaws
- 12 Filler nozzle

►►5 Tightening any loose screws

- Retract and extend the piston several times.

5 Operation

✓ Puller is appropriate for the component's dimensions.

1. Fully retract the piston into the hydraulic cylinder.
2. Set the switching valve to [ADVANCE].
3. Turn the knurled nut clockwise to open the arms.

►►6 Setting the switching valve to [ADVANCE] and loosening the knurled nut

- Attach the centring piece. If necessary, insert an adapter piece between the centring piece and piston.

►►7 Inserting adapter pieces

- Position the arms on the component.

►►8 Positioning the arms on the component

- If necessary, use a suitable TRI-SECTION-PLATE.

►►9 Using a TRI-SECTION-PLATE

- Slowly turn the hydraulic cylinder clockwise until the centring piece comes into contact with the shaft end or cannot be extended further.

- Tighten the knurled nut anti-clockwise until the arms grip the component.

- Attach the safety net or safety blanket.

- Mount the pump lever.

- Remove the pump lever.

- Remove the safety net or safety blanket.

- Remove the pump lever.

- Remove the safety net or safety blanket.

- Remove the pump lever.

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- Remove the pump lever.

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- Remove the pump lever.

- Remove the safety net or safety blanket.

- Remove the pump lever.

- Remove the safety net or safety blanket.

7 Decommissioning

1. Clean the puller with a dry cloth.
2. Store the puller in a dry location.

8 Maintenance

- Clean the device with a cloth and a mild degreasing agent after each use.

8.1 Refilling with oil

- ✓ Use hydraulic oil PUMP.HYDOIL-LPS78-1L.
- 1. Clamp the hydraulic cylinder gently and horizontally in a vice with the filler nozzle facing upwards.
- 2. Set the switching valve to [RETURN].
- 3. Fully retract the piston into the hydraulic cylinder.
- 4. Loosen the set screw in the filler nozzle using an Allen key.
- 5. Refill with oil up to the lower edge of the bore.
- 6. Screw the set screw into the filler nozzle and tighten it using an Allen key.
- 7. Retract and extend the piston several times.

9 Disposal

Disposal must be carried out in accordance with locally applicable regulations.

10 Technical data

►►1 Available models

►►20 Dimensions

►►2 Dimensions

F _p	kN	Extraction force
H	mm	Stroke
m	kg	Mass
t	mm	Grip depth
w	mm	Grip width

►►22 Declaration of Conformity

CE Declaration of Conformity	
Manufacturer name:	Schaeffler Smart Maintenance Tools B.V.
Manufacturer address:	Schoningh 15, 8171 ME Vaassen, NL
Telephone:	+31 578 668 000
Website:	www.schaeffler-smart-maintenance-tools.com
Product description:	Hydraulic puller
Model:	HSP-43
Production date:	1-1-2025

Model:	HSP-43
Production date:	1-1-2025
Model:	HSP-63
Production date:	1-1-2025
Model:	HSP-83
Production date:	1-1-2025
Model:	HSP-123
Production date:	1-1-2025
Model:	HSP-203
Production date:	1-1-2025
Model:	HSP-303
Production date:	1-1-2025
Model:	HSP-303-XL
Production date:	1-1-2025

Model:	HSP-43
Production date:	1-1-2025
Model:	HSP-63
Production date:	1-1-2025
Model:	HSP-83
Production date:	1-1-2025
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Model:	HSP-203
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Model:	HSP-303-XL
Production date:	1-1-2025

• HSP 203	• HSP 203	
	• HSP 305 25	
	• HSP 305 IL	
• HSP-63	• HSP-63	• TB-SECTION SET-6T
• HSP-63	• HSP-63	• TB-SECTION SET-6T
• HSP-63	• HSP-63	• TB-SECTION SET-8T
• HSP-123	• HSP-123	• TB-SECTION SET-12T
• HSP-203	• HSP-203	
	• HSP-305 10	

10 Simboli upozorenja i simboli opasnosti

Znak i objašnjenje	
▲UPOZORENJE	U slučaju nepridržavanja može doći do smrti ili teških ozljeda.
▲OPASNE	U slučaju nepridržavanja može doći do lakših ozljeda.

1.2 Pravne napomene

Informacije u ovom uputama odražavaju stanje u trenutku objavljivanja. Nisu dopuštene svojevoljne izmjene, kao ni neprijava postupaka proizvodva. Schaeffler ne preuzima nikakvu odgovornost za takve slučajeve.

1.3 Slike

Slike u ovom uputamu mogu biti načelni prikazi koji odstupaju od isporučenog proizvoda.

2 Općenite sigurnosne odredbe

2.1 Namjena upotreba

Alat za skidanje smije se upotrebljavati samo za demontažu zavrtnja, ležajeva i drugih rotacijski simetričnih komponenti montiranih na vratilo. Alat za skidanje smije se upotrebljavati samo u skladu s tehničkim podacima.

Kao rezervne dijelove i pribor upotrebljavajte samo originalne dijelove koji isporučuje Schaeffler.

2.2 Kvalificirane osobe

Obveze operatera:

- Osigurajte da aktivnosti opisane u ovom uputamu provode isključivo kvalificirane i ovlaštene osobe.
- Osigurajte da se upotrebljava osobna zaštitna oprema.
- Kvalificirane osobe ispunjavaju sljedeće kriterije:
 - Posjeduju znanja o proizvodu, npr. stečena iskustvom za rad s proizvodom
 - Potpunju su upoznate sa sadržajem ovih uputama, naročito sa svim sigurnosnim napomenama
 - Poznaju relevantne državne propise

3 Opseg isporuke

►►12 Opseg isporuke: HSP

- HSP (1×)
- sigurnosna mreža ili sigurnosna navlaka (1×)
- element za centriranje (1×)
- adapterski element (1× do 4x, ovisno o veličini)
- poluga za pumpanje (1×)
- kovčeg (1×)

4 Stavljanje u pogon

Alat za skidanje može se upotrebljavati s 2 ili s 3 kraka. Preporučuje se konfiguracija s 3 kraka radi ravnomjernije raspodjele vučne sile.

- Na uređaju nema nikakvih oštećenja.

- Montirajte 2 ili 3 kraka u skladu sa slikama.

- 13 Konfiguracija s 2 kraka
 - Poluga za pumpanje
 - Integrirana hidraulička ručna pumpa
 - Ventil za prebacivanje
 - Hidraulički cilindar
 - Gornja zvijezda
 - Narovašena matica
 - Donja zvijezda
 - Krak
 - Klip
 - Element za centriranje
 - Čeljust za skidanje
 - Nastavak za punjenje

- 14 Konfiguracija s 3 kraka
 - Poluga za pumpanje
 - Integrirana hidraulička ručna pumpa
 - Ventil za prebacivanje
 - Hidraulički cilindar
 - Gornja zvijezda
 - Narovašena matica
 - Donja zvijezda
 - Krak
 - Klip
 - Element za centriranje
 - Čeljust za skidanje
 - Nastavak za punjenje

- 15 Skidanje komponente
 - Poluga za pumpanje
 - Integrirana hidraulička ručna pumpa
 - Ventil za prebacivanje
 - Hidraulički cilindar
 - Gornja zvijezda
 - Narovašena matica
 - Donja zvijezda
 - Krak
 - Klip
 - Element za centriranje
 - Čeljust za skidanje
 - Nastavak za punjenje

- Zategnite nezategnute vijke.

- 15 Zategnite nezategnute vijke

- Više puta uvucite i izvucite klip.

5 Rad

Alat za skidanje prikladan je za dimenzije komponente.

- Do kraja umetnite klip u hidraulički cilindar.
- Ventil za prebacivanje postavite na [ADVANCE].
- Okrećte narovašenu maticu u smjeru kazaljke na satu kako bi se krakovi otvorili.

►►16 Ventili za prebacivanje postavite na [ADVANCE] i otpustite narovašenu maticu

►►17 Postavite element za centriranje. Ako je potrebno umetnite adapterski element između elementa za centriranje i klipa.

- 17 Umetanje adapterskih elemenata

►►18 Postavite krakove na komponentu.

- 18 Postavljanje krakova na komponentu

Ako je potrebno, upotrijebite odgovarajući dodatni TRI-SECTION-PLATE.

- 19 Upotreba dodatka TRI-SECTION-PLATE

►►19 Polako odvrnite hidraulički cilindar u smjeru kazaljke na satu sve dok element za centriranje ne sjedne na prednju stranu vratila ili dok se više ne može izvuci.

Zavrnite narovašenu maticu suprotno od smjera kazaljke na satu toklo da krakovi nalignu na komponentu.

►►10 Zavrtnje narovašene maticе i odvrtnje hidrauličkog cilindra

Uz održavanje razjeka između elementa za centriranje i prednje strane vratila izvlačite klip aktiviranjem poluge za pumpanje sve dok element za centriranje ne dođe u dodir s prednjom stranom vratila

Klip izvucite najviše do crvene oznake.

U slučaju konusnog čvrstog dosjeda upotrijebite sigurnosnu maticu

- 11 U slučaju konusnog čvrstog dosjeda upotrijebite sigurnosnu maticu

►►12 Provjerite jesu li krakovi čvrsto postavljeni na 2 ili 3 točke na komponenti.

►►13 Alat za skidanje poravnajte sa simetričnom osi komponente.

- 12 Poravnavanje simetričnih osi

►►14 Postavite sigurnosnu mrežu ili sigurnosnu navlaku.

►►15 Postavljanje sigurnosne mreže ili sigurnosne navlake

►►16 Montiranje poluge za pumpanje.

- 14 Montiranje poluge za pumpanje

▲ UPOZORENJE

Udarno otpuštanje čvrstog dosjeda

Opasnost po život uslijed udarnog otpuštanja konusnog čvrstog dosjeda

- Upotreba sigurnosne maticе

▲ UPOZORENJE

Izlijetanje komponenti

Opasnost po život uslijed izlijetanja komponenti

- Upotreba sigurnosne mreže ili sigurnosne navlake

►►16 Jednom rukom držite alat za skidanje i aktivirajte polugu za pumpanje kako biste skinuli komponentu.

- 15 Skidanje komponente

►►16 Demonstriranje poluge za pumpanje.

►►17 Skinite sigurnosnu mrežu ili sigurnosnu navlaku.

►►17 Skidanje sigurnosne mreže ili sigurnosne navlake

►►18 Ventili za prebacivanje postavite na [RETURN]. Klip se uvlači u hidraulički cilindar.

►►18 Ventili za prebacivanje postavite na [RETURN]

►►19 Okrećte narovašenu maticu u smjeru kazaljke na satu kako bi se krakovi otvorili.

- 19 Postupak skidanja je dovršen

6 Otklanjanje smetnji

►►11 Smetnja

Smetnja Mogući uzrok Pomoć

Pompa ne može poslužiti potrebni tlak

Klip se ne uvlači

Izlaženje ulja na prednjoj strani cilindra

►►17 Skidanje sigurnosne mreže ili sigurnosne navlake

►►18 Ventili za prebacivanje postavite na [RETURN]. Klip se uvlači u hidraulički cilindar.

►►18 Ventili za prebacivanje postavite na [RETURN]

►►19 Okrećte narovašenu maticu u smjeru kazaljke na satu kako bi se krakovi otvorili.

►►19 Postupak skidanja je dovršen

7 Povlačenje iz upotrebe

- Alat za skidanje očistite suhom krpom.
- Alat za skidanje držite na suhom mjestu.

8 Održavanje

Nakon završe upotrebe očistite uređaj krpom i blagim sredstvom za odmašćivanje.

8.1 Doljevanje ulja

►►19 Upotrijebite hidrauličko ulje PUMP-HYDOL- LP578-1L.

- Hidraulički cilindar lagano zategnite u škripcu, tako da bude u vodoravnom položaju i da nastavak za punjenje bude okrenut prema gore.
- Ventili za prebacivanje postavite na [RETURN].
- Do kraja uvucite klip u hidraulički cilindar.
- Odvrnite svorni vijak u nastavku za punjenje šesterokutnim utičnim ključem.
- Dolijte ulje do donjeg ruba otvora.
- Uvrnite svorni vijak u nastavak za punjenje i zategnite ga šesterokutnim utičnim ključem.
- Više puta uvucite i izvucite klip.

9 Zbrinjavanje

Pr zbrinjavanju se pridržavajte lokalnih propisa.

10 Tehnički podaci

►►20 Dimenzije

►►21 Dimenzije

►►22 Izjava o sukladnosti

FN	kN	Sila povlačenja
H	mm	Podizaj
m	kg	Težina
t	mm	Stezna dubina
w	mm	Stezna širina

 22 Izjava o sukladnosti