9
17.07.2025

*power*CLAMP & *5-akselisuus*

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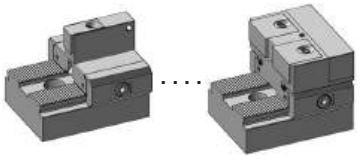
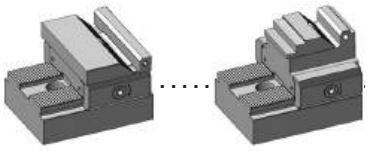
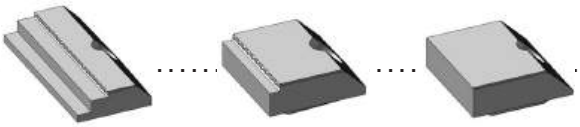
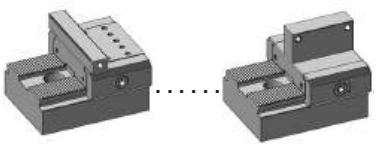
Alas vetävät puristusmoduulit . . . . .  . . . 60 - 73

Lineaariliikkeiset puristusmoduulit joissa hammastetut leuat . . . . .  . . . . 74 - 83

Leuat lineaariliikkeisiin moduuleihin . . . . .  . . . . . 82 - 84

Päätymoduulit . . . . .  . . . 85 - 92

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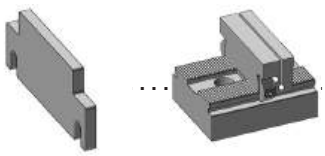
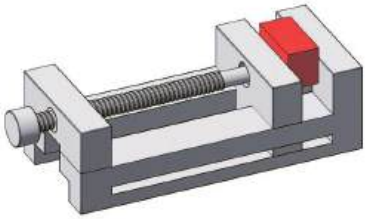
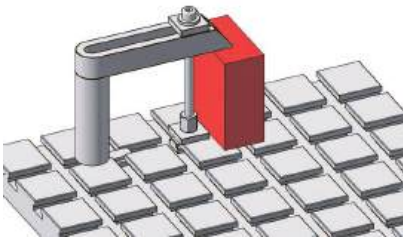
Tarvikkeet . . . . .  . . . 106 - 112

Klassinen koneruuvipuristin on vieläkin hyvä valinta tiettyihin koneistustöihin ja vaikka niitä voidaan asettaa koneistuskeskuksen pöydälle useita kappaleita, ovat niiden tarjoamat kappaleen kiinnitysvariaatiomahdollisuudet rajalliset.
Jatkuvasti kasvavien kustannuspaineiden ja tuotannon optimointitavoitteiden johdosta ne korvataan yhä useammin modulaarisilla kiinnitysjärjestelmillä.

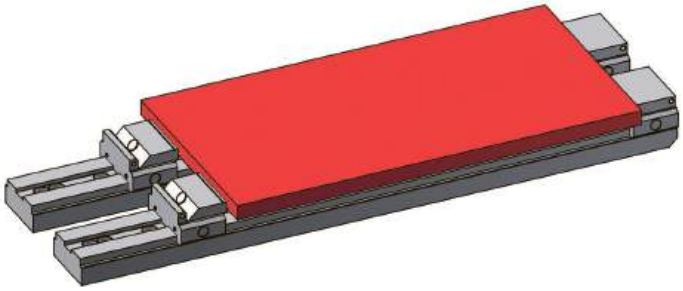


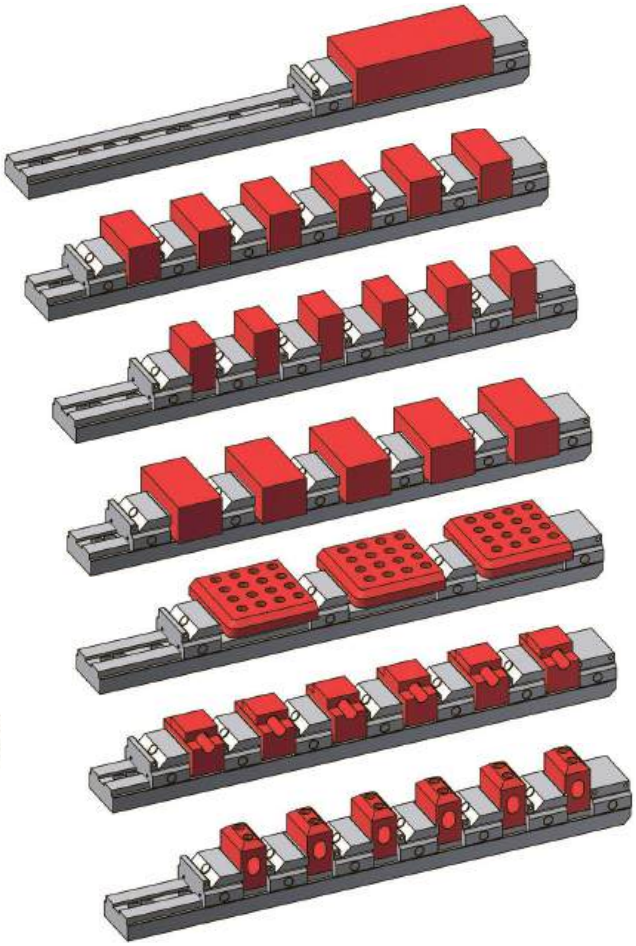
Kiinnitys koneruuvipuristimella



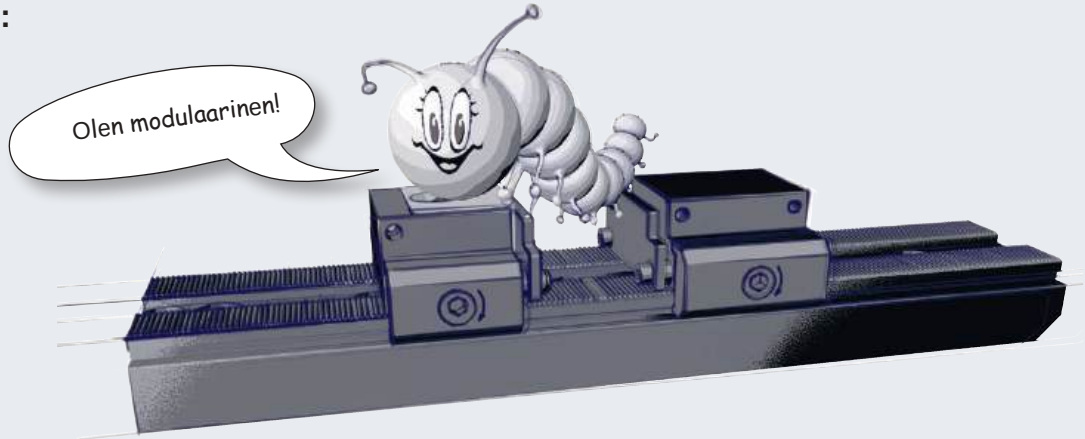
Kiinnitys puristusrauta järjestelmällä

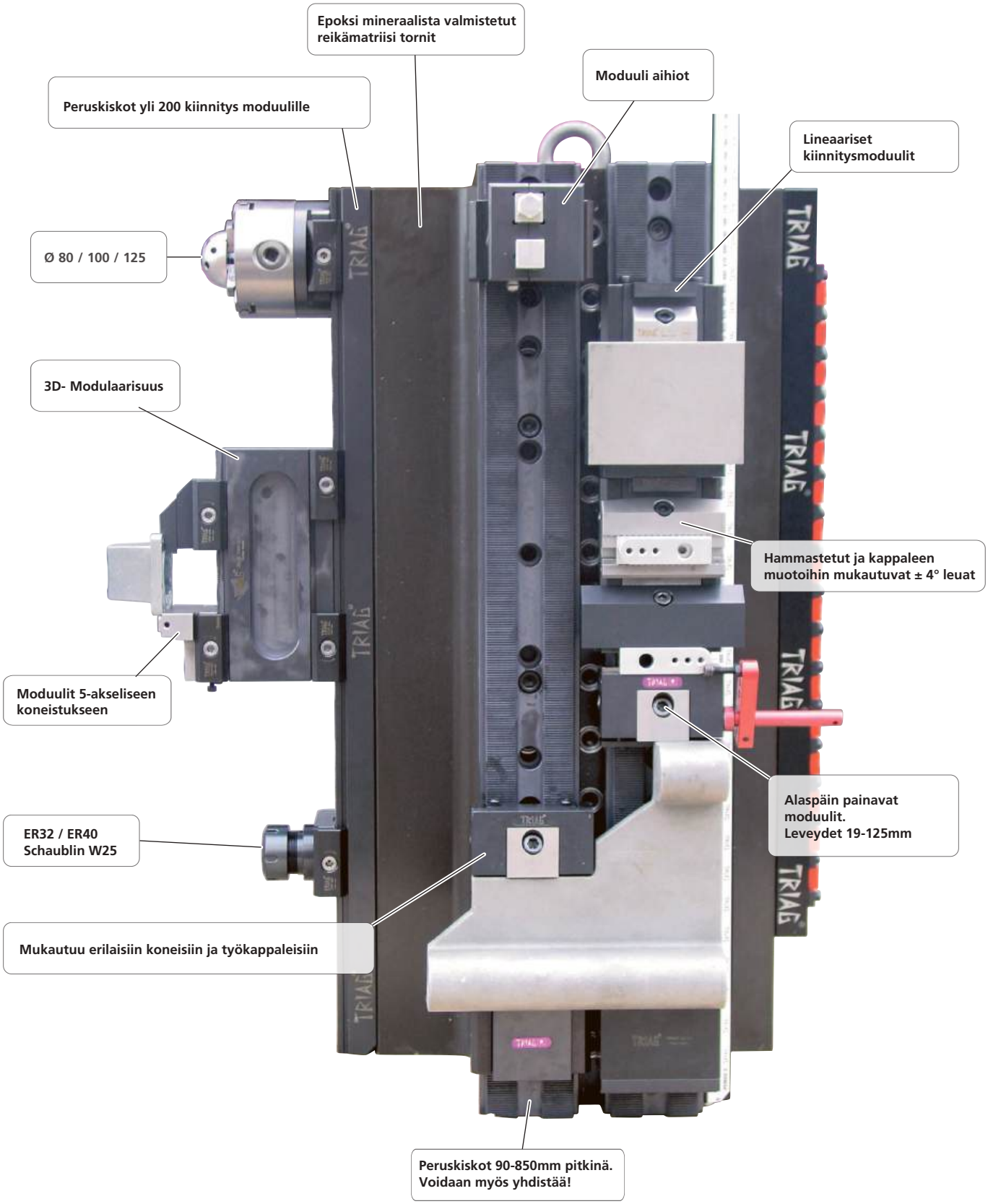
Modulaariset järjestelmät saavuttavat suuren joustavuuden ja niihin saadaan kiinnitettyä enemmän kappaleita koneen työtilaan.
Tämä johtaa myös kustannustehokkuuteen koneiden seisokkiaikojen vähentyessä, mikä on arvoketjun kannalta keskeinen tekijä. Myös yksittäiskappale- ja pienerätuotannossa. Kappalekohtaisiin kiinnittimiin verrattuna modulaarisen rakenteen etuina on että se koostuu standardoiduista yksittäisistä komponenteista, mikä tekee kiinnittämisestä kustannustehokkaampaa ja moduulit voidaan aina uudelleen käyttää uusissa kiinnityksissä. Rakenteensa takia tällä järjestelmällä saavutetaan lisäksi kiinnityksiä joiden avulla kappaleiden koneistettavuus on erinomainen.(Ei turhaa rautaa kappaleen ympärillä).





Sen lisäksi:





Modulaarinen työkappaleen kiinnitys =

Yksittäisten kappaleiden kiinnitys. Kappalesarjojen kiinnitys. Pienten ja suurempien kappaleiden kiinnitys. Symmetristen ja epässymmetristen kappaleiden kiinnitys. Kaoottinen sekakiinnitys, tuoteperhekiinnitys. Nopea kasata, helppo dokumentoida. 3D-mallien ansiosta voidaan kokoonpanot suunnitella CAD/CAM-ohjelmistoilla.

Triag International on kehittänyt Power Clamp -kiinnitysjärjestelmän, joka yhdistää optimaalisesti klassisen koneruuvipuristimen edut innovatiivisen kiinnitysjärjestelmän modulaarisuuteen ja tarjoaa valtavan monipuolisen kiinnitysvalikoiman.

Yksittäiskappalekiinnitys on yhtä lailla mahdollista kuin useiden kappaleiden kiinnitykset ja vaikeamuotoisten työkappaleiden kiinnitykset.

3D-mallit ja kiinnitinelementtien tarkkuus mahdollistavat kiinnitysten suunnittelun etukäteen ja nopean toteutuksen esisuunnittelun mukaan.

Nopeus on valttia

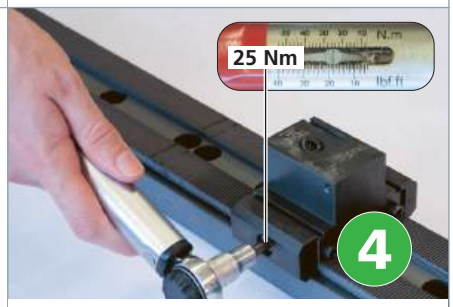
Löysää yhtä ruuvia

Nosta ja asemoi uudelleen

Kiristä yhtä ruuvia

Asemoidut moduulit kiinnitetään yhdellä ruuvikaralla, johon pääsee käsiksi molemmilta puolilta peruskiskoa.

Moduulit voidaan asentaa mihin tahansa kohtaan peruskiskoa. Perinteiseen aksiaaliseen liukujärjestelmään verrattuna tämä nopeuttaa useiden kiinnittimien kokoonpanoa ja mahdollistaa kiinnitysmoduulien kätevän asennuksen myös ahtaissa tiloissa.



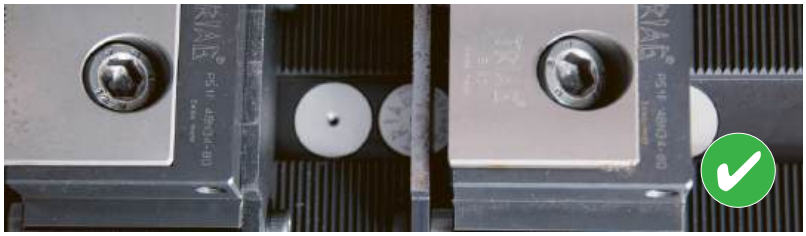
Huomioi kiristysmomentti

Kevyt

= Helppo käsitellä

Moduuleita voidaan nostaa ja siirtää kahdella sormella

Helppo puhdistaa



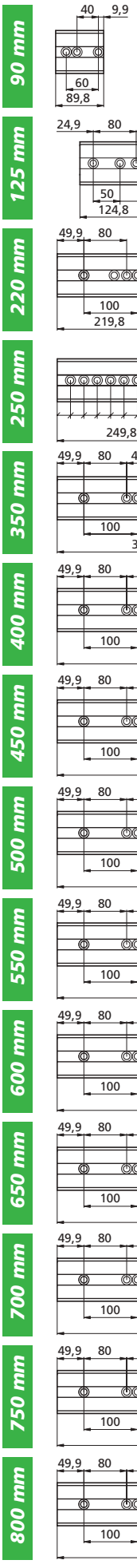
Ei lastuista täyttyviä T-uria (toisin kuin monissa kilpailevissa tuotteissa) – pohja muodostuu vakaista peruskiskoista, joita voidaan pidentää osilla. Peruskiskoissa on erittäin tarkasti jyrsitty hammastus.

Tukikiskoille voidaan sijoittaa erilaisia kiinnitysmoduuleja erilaisilla kiinnityselementeillä tarkasti 2 mm:n välein. Elementit, kuten suuntaispalat, pysyvät esimerkiksi paineilma puhdistuksen aikana paikoillaan, mikä helpottaa puhdistusta ja käyttöä.

Peruskiskot

Metrinen ja tuumamittainen järjestelmä

powerCLAMP



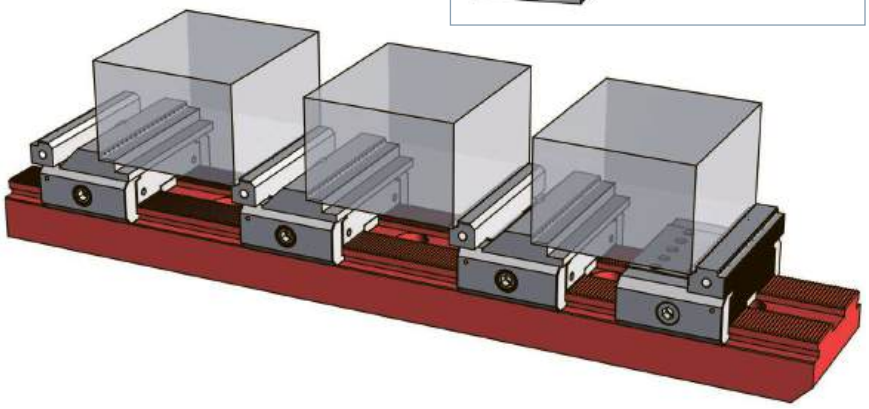
Kiskoja on saatavana seuraavilla korkeuksilla:

➥ 35 mm

➥ 60 mm

➥ 80 mm

➥ 175 mm



Peruskiskot

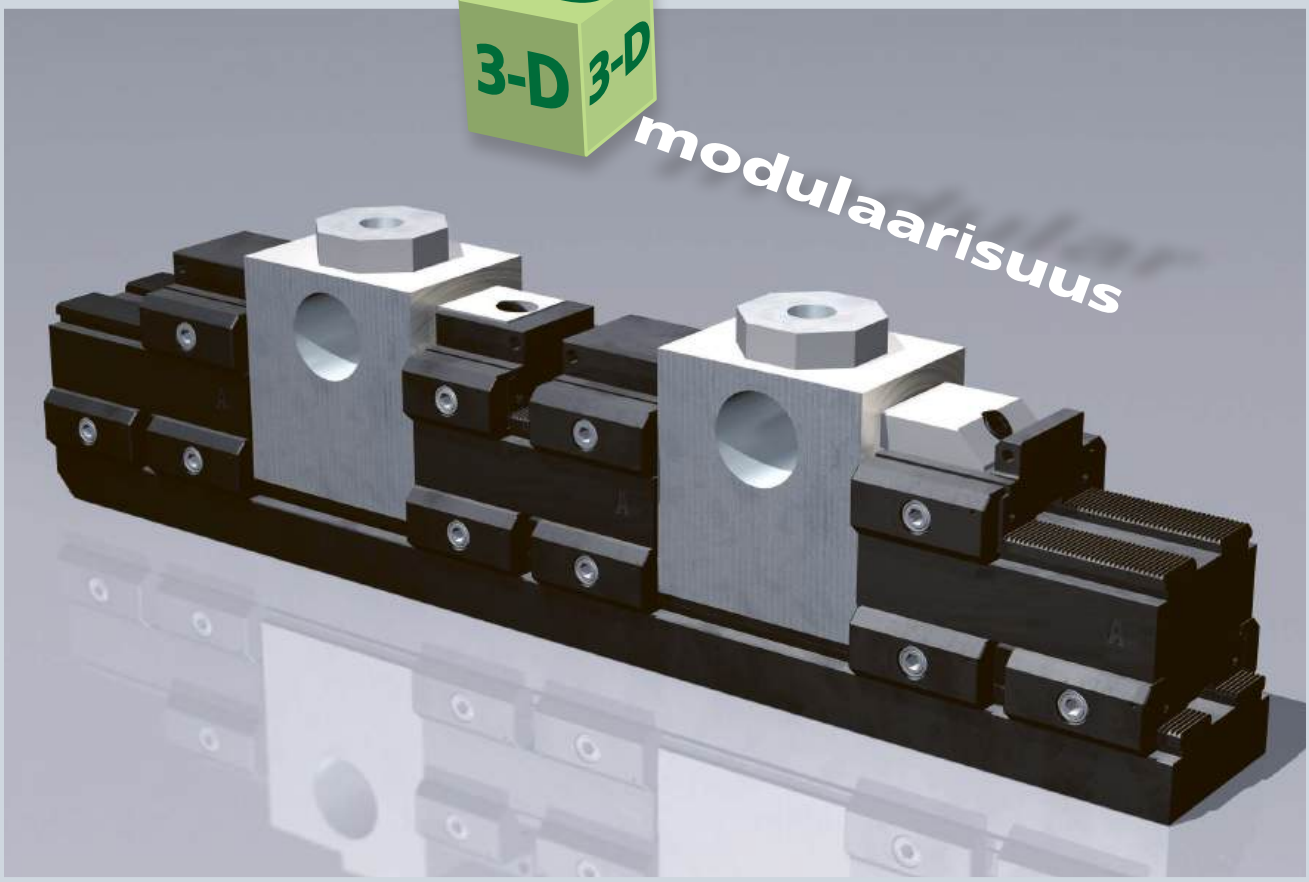
Peruskisko on Triag Internationalin modulaarisen kiinnitysjärjestelmän peruselementti, ja sitä on saatavana 35 mm, 60 mm, 80 mm ja 175 mm korkeuksina. Kaikki kiinnitys- ja päätymoduulit ovat kiinnitettyjä peruskiskoon ruuvikaralla, jonka pitovoima on 15 000 daN (= 15 t). Pohjakiskon hammastus (2 mm:n jako) varmistaa nopean ja tarkan asemoinnin, mikä takaa lyhyet asennusajat.

Korotusmoduulien käyttö mahdollistaa työkappaleen saavutettavuuden, erityisesti 5-akselisissa koneissa, myös lyhyillä työkalunpitimillä. Tämä tarkoittaa, että työkappaleen enimmäiskokoa rajoittaa vain koneen liikealueen koko. Tässä yhteydessä pohjakisko toimii mekaanisena nollapistejärjestelmänä.

Peruskiskot ovat suunniteltu nopeaan kiinnitykseen yleisimpiin palettijärjestelmiin. Painosyistä voidaan käyttää myös mineraalivaluista valmistettuja, erityisesti kehitettyjä kiinnitystorneja. Näillä on niin korkea värinänvaimennus, että tornien yläosassakin voidaan suorittaa erittäin tarkkaa työtä ja saavuttaa erinomainen pinnanlaatu.

Peruskiskot

Metrinen ja tuumamittainen järjestelmä



Erilaisten perusmoduulien avulla voit luoda myös modulaarisen kolmannen ulottuvuuden! 60 mm:n korkeudella moduulin korkeutta voidaan nostaa 94 tai 109 mm:iin (34mm/49mm korkeat kiinnitysmoduulit). 130 mm:n pituus mahdollistaa yhden kiinnitysmoduulin ja yhden päätymoduulin kiinnittäisen korkeammalle kiskoon.

Lisätietoja sivulta 48

Peruskiskot

Peruskiskoja voidaan siis jatkaa, *(pisin yhtenäinen on 850mm pitkä)* niitä voidaan korottaa ja niihin voidaan asettaa yli 200 erilaista kiinnitysmoduulia.

Peruskiskot kiinnitetään M12 olakepulteilla matriisilevyihin, torneihin tai muihin alustoihin. Kiskoista löytyy reikäjaot 40mm ja 50mm, joten myös 80mm ja 100mm jaolla olevat matrsiisit sopivat hyvin.

Osassa kiskoista on myös 25mm jako ja osan voi asettaa matriisiin 45 -asteen kulmassa diagonaalisesti. Tämä lisää mahdollisuuksia erilaisten kiinnitysten luomiseksi erilaisiin koneympäristöihin.

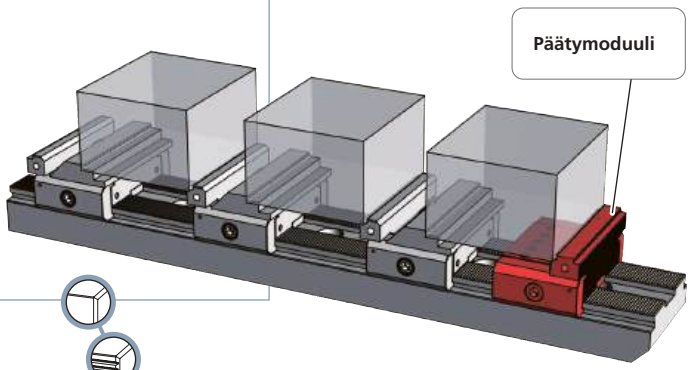
Korkeammat peruskiskot ovat erinomaisia 5-akselisessa koneistuksessa.

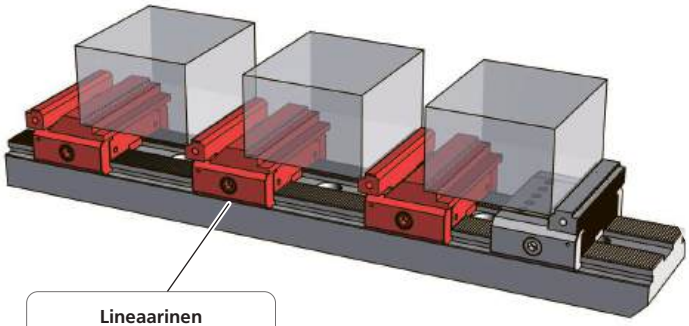
Tuumamittaiset peruskiskot

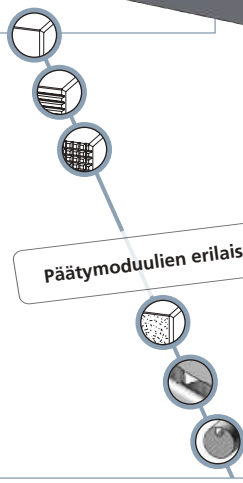
Päätymoduulit

"Power Clamp" -kiinnitysjärjestelmässä tarvitaan yleensä vain yksi päätymoduuli "kiinteänä leukana". 2 mm:n hammastuksen ansiosta moduuli voidaan sijoittaa erittäin tarkasti peruskiskoon ja kiinnittää nopeasti ruuvikaralla.

Saatavilla on useita versioita erilaisiin työstötilanteisiin. Ne eroavat toisistaan leukojen leveyden (19 mm:stä enintään 150 mm:iin) ja kiinnityspintojen luonteen *(sileät, hammastetut, uritetut, kovametallipinnoitetut tai kohokuvioidut hammastukset suoraan kohopainatusta varten)* suhteen.







Lineaarinen hammastettu liikkuva kiinnitysmoduuli

Kiinnitysmoduulit

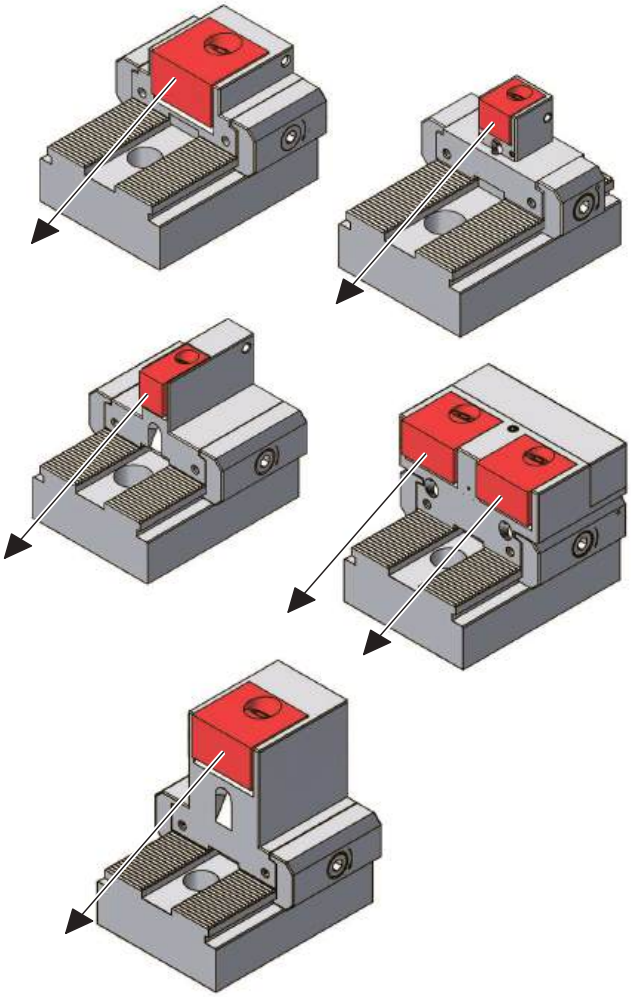
"Liikkuvia leukoja" on saatavilla kahtena eri versiona: toinen alasvetoiseen kiinnitysjärjestelmään ja toinen lineaariseen kiinnitysjärjestelmään. Molemmissa järjestelmissä kiinnitysmoduuli toimii myös päätymoduulina seuraavaa kiinnitysoperaatiota varten.

Kuten päätymoduuleissa, kiinnityspinnan leveys vaihtelee 19 mm:n ja 125 mm:n välillä. Kiinnityspintojen, kuten kohokuviointileukojen tai puristustappien, innovatiiviset rakenteet saavuttavat valtavat pitovoimat.

Laajoissa työkappaleen siirtymän testeissä 2000 daN:n kiinnitysvoimalla ja jopa 600 daN:n lastuamisvoimalla kohokuviointileukoja käytettäessä havaittiin vain minimaalisia poikkeamia nollapisteestä. Työkappaleiden yhdensuuntaisuuden pienet poikkeamat kompensoidaan kiinnitysmoduulien heiluritoiminnolla (± 4°).

Saatavilla on myös innovatiivisia ratkaisuja erikoiskiinnitystehtäviin, kuten muotoleuat, kolmileukaiset- ja holkki-istukat, vakuumikiinnitykset tai magneettiset kiinnityslevyt.

Alaspäin vetävät liikkuvat kiinnitysmoduulit



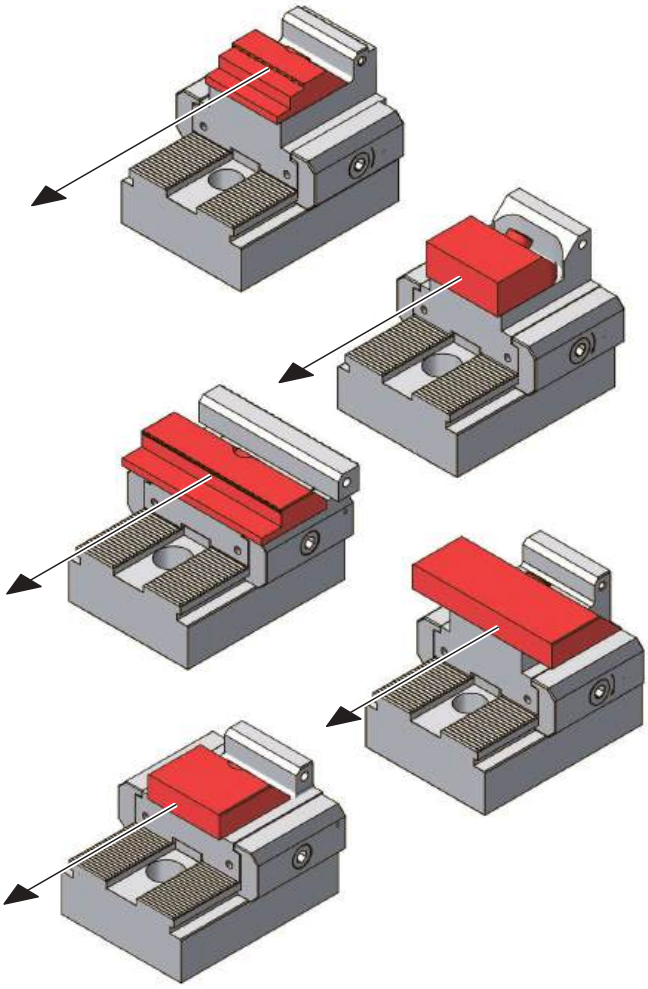
Tietoa alaspäin vetävistä kiinnitysmoduuleista

Liikealue: 0- 4,1 mm
Puristusvoima: Jopa 2´800 daN

Alaspäin vetävän kiinnitysmoduulin edut:

- Suuremat kiinnitysvoimat
- Erinomainen voiman toistettavuus (Momenttiavaimella)
- Optimaalinen kiinnitysmenetelmä pienille osille
- Vaihdettavat pikavaihtoleuat
- Mahdollisuus käyttää kaksois-leuka kiinnitystä samassa kiinnitysmoduulissa, kahden pienen kappaleen kiinnittämiseksi
- Adapterin avulla mahdollisuus muuttaa myös lineaariseksi liikkeeksi
- Saatavilla myöls alasveto-efektillä varustettuja päätyeelementtejä

Lineaariset liikkuvat kiinnitysmoduulit



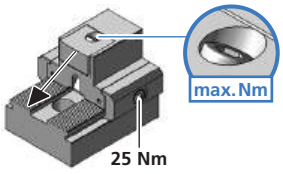
Tietoa lineaarisista kiinnitysmoduuleista

Liikealue: 0- 5,0 mm
Puristusvoima: Jopa 1´600 daN

Lineaarisen kiinnitysmoduulin edut:

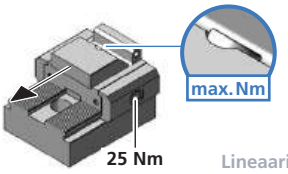
- Ruuvipuristimen kaltainen kiinnitys
- Toisen koneistusvaiheen varma ja tarkka kappaleen asemointi.
- Soveltuu hyvin kun halutaan käyttää muotoon koneistettuja leukoja
- Varma ja tukeva kappaleen kiinnitys erilaisten hammastettujen ja karhennettujen leukojen kontaktipintojen ansiosta

HUOMIO



Alaspäin vetävät kiinnitysmoduulit

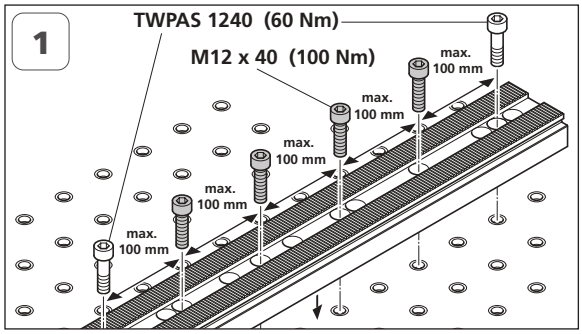
Ruuvi	Kiristysmomentti		Kiinnitysvoima		
	Nm	(lb-ft)	~daN	~(lb)	~t
M5 + M6	4	3	= 500	1100	0,50
	5	3,7	= 580	1280	0,58
	6	4,4	= 690	1520	0,69
	7	5,2	= 780	1720	0,78
	8	5,9	= 880	1940	0,88
	9	6,6	= 980	2160	0,98
	10	7,4	= 1020	2250	1,02
M6	12	8,9	= 1220	2690	1,22
	14	10,4	= 1450	3200	1,45
	15	11	= 1520	3350	1,52
M8	4	3	= 410	900	0,41
	5	3,7	= 490	1080	0,49
	6	4,4	= 560	1230	0,56
	7	5,2	= 660	1450	0,66
	8	5,9	= 730	1600	0,73
	9	6,6	= 810	1790	0,81
	10	7,4	= 900	1980	0,90
	15	11	= 1520	3350	1,52
	20	14,8	= 1810	3990	1,81
	25	18,4	= 2100	4630	2,10
M10	10	7,4	= 400	880	0,40
	20	14,8	= 1400	3090	1,40
	30	22,1	= 2000	4410	2,00
	40	29,5	= 2800	6170	2,80

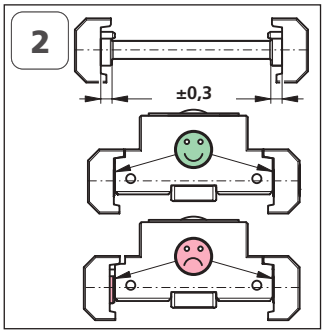


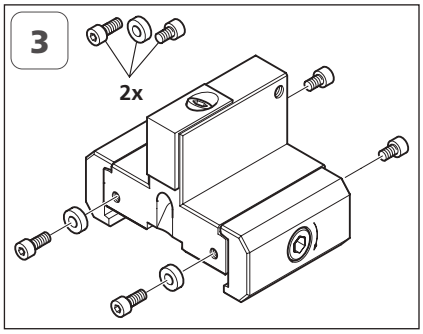
Lineaariset kiinnitysmoduulit

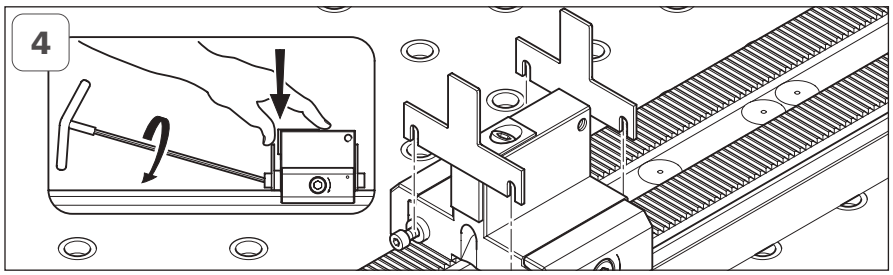
Ruuvi	Kiristysmomentti		Kiinnitysvoima		
	Nm	(lb-ft)	~daN	~(lb)	~t
M8	10	7,4	= 400	880	0,4
	20	14,8	= 800	1760	0,8
	30	22,2	= 1200	2650	1,2
	40	29,6	= 1600	3530	1,6

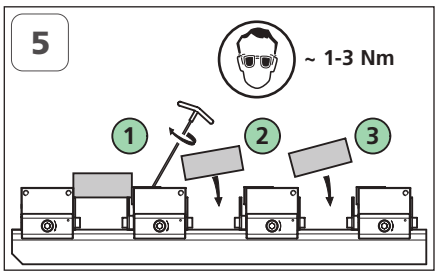
TÄRKEÄÄ: Ilmoitetut kiristysmomentit ovat absoluuttisia maksimiarvoja. Taulukot antavat tietoa puristusvoimista.

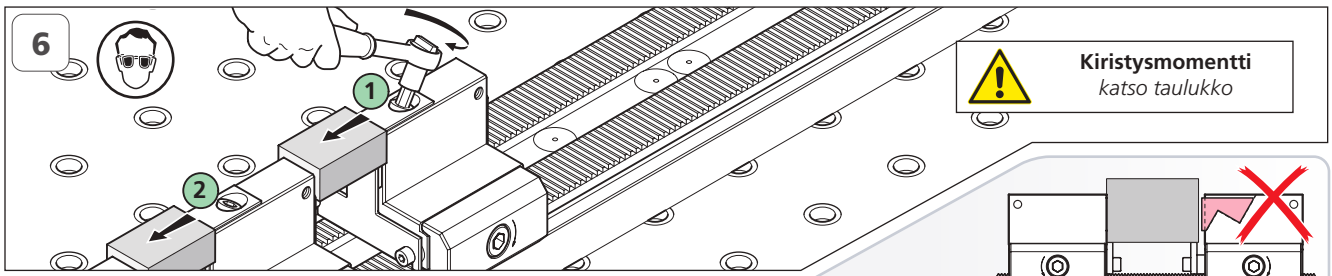


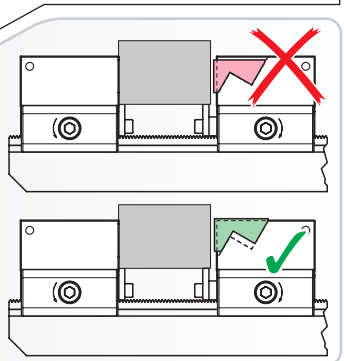










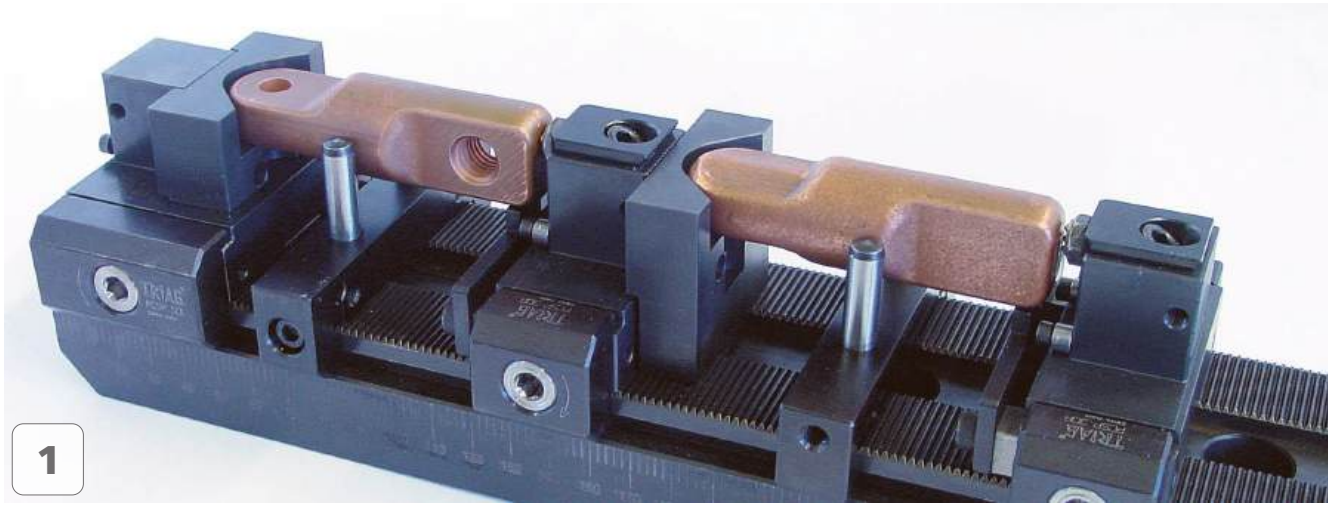


7

TÄRKEÄÄ:
Ennen uuden kiinnitysmoduulin asentamista peruskiskoon kiinnitysleuka on vedettävä kokonaan sisään! Tämä takaa uuden työkappaleen kunnollisen kiinnityksen.

Pystykarasovellukset

(3-4 akseliset koneet)



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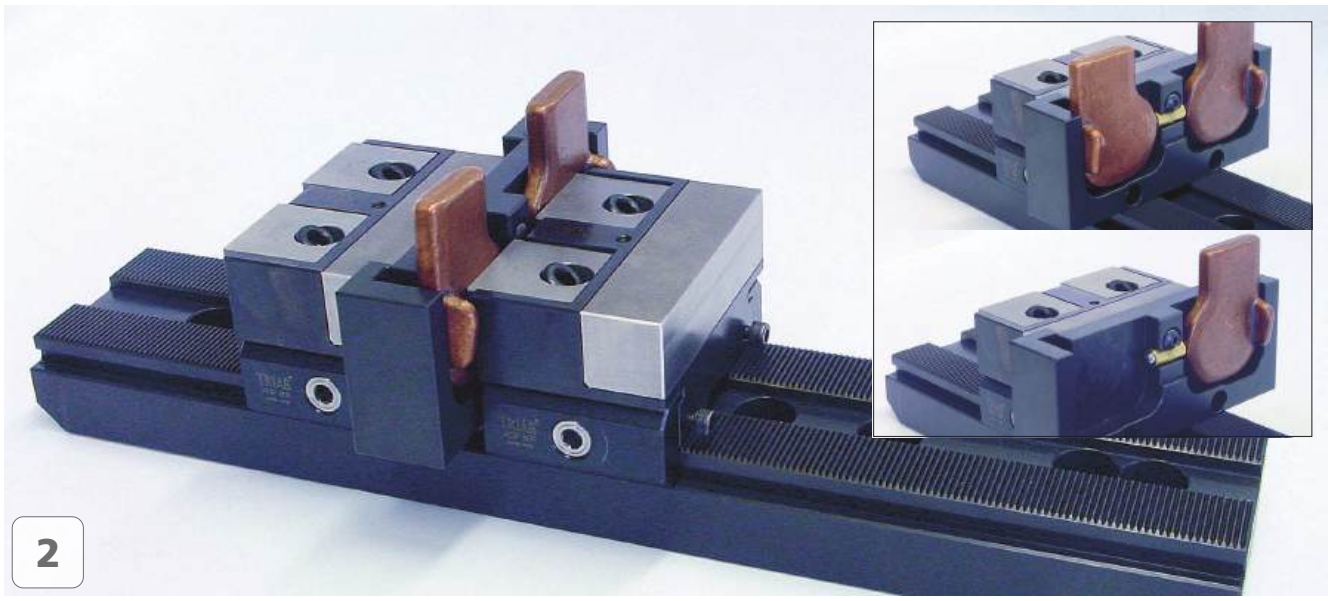

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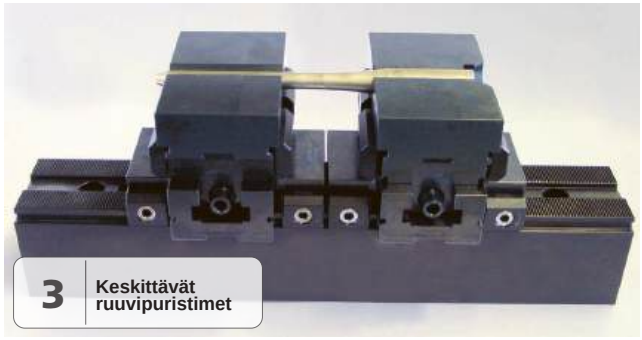
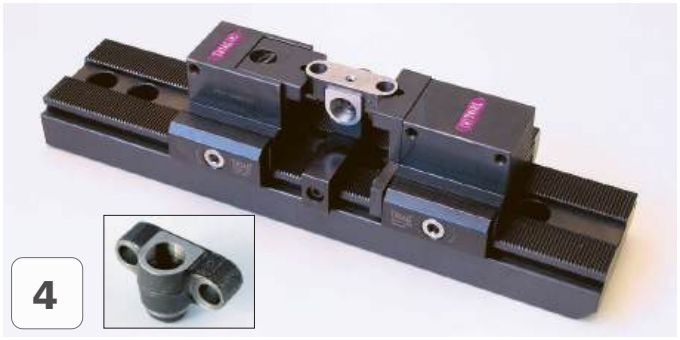


3 Keskittävät ruuvipuristimet



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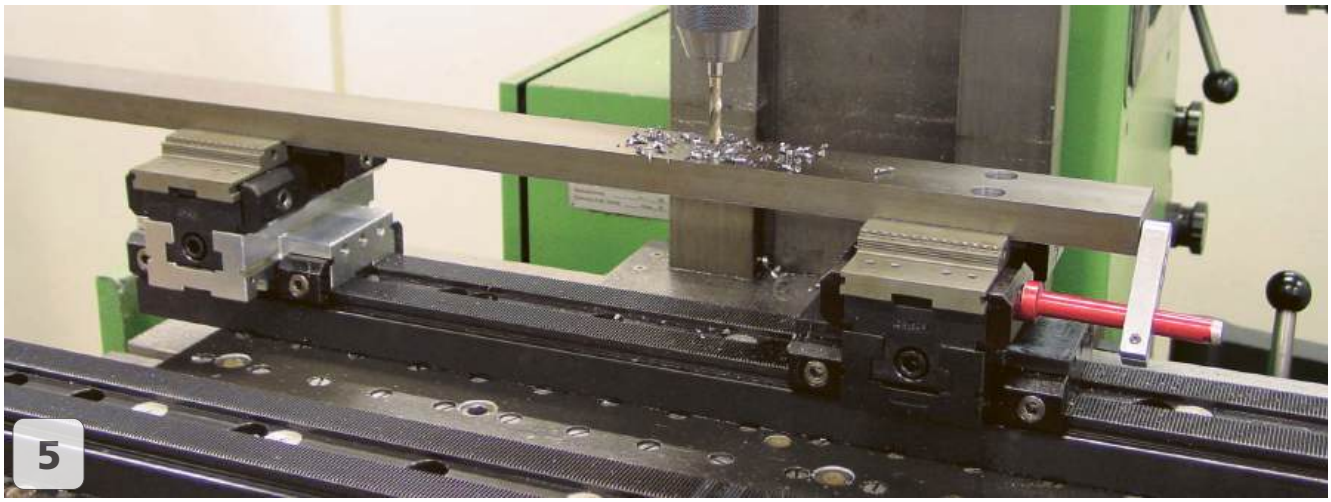

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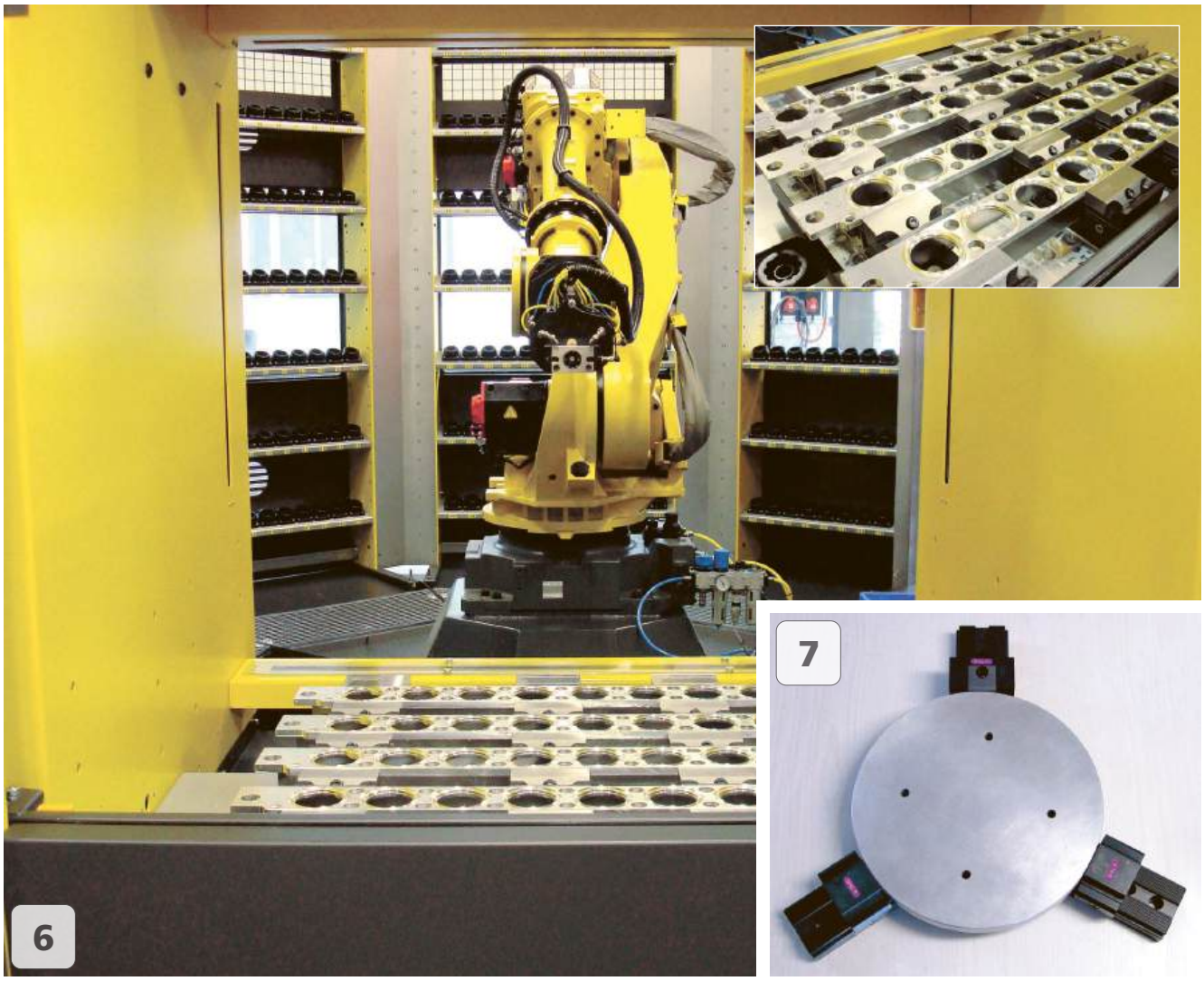
Pystykarasovellukset

(3-4 akseliset koneet)



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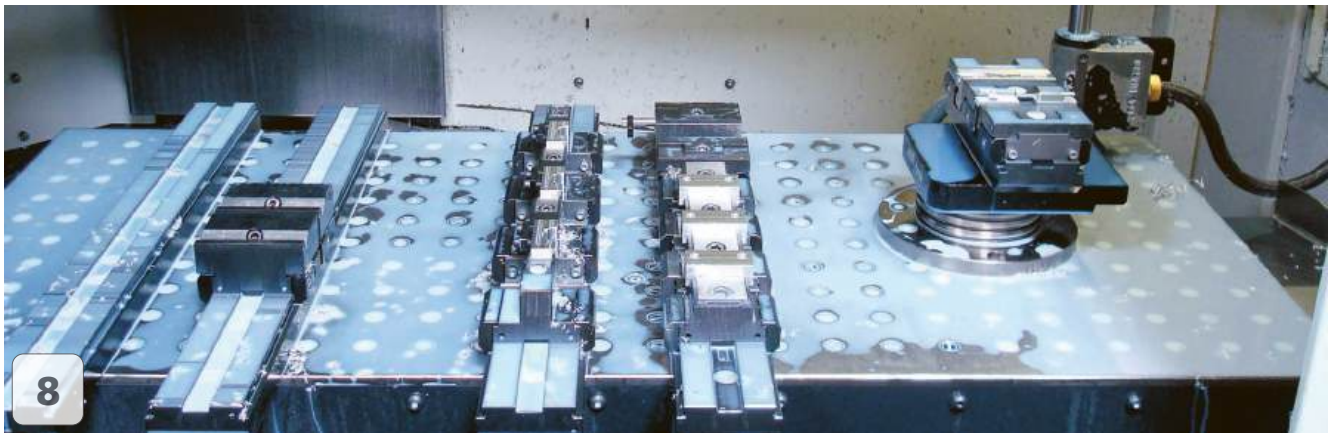

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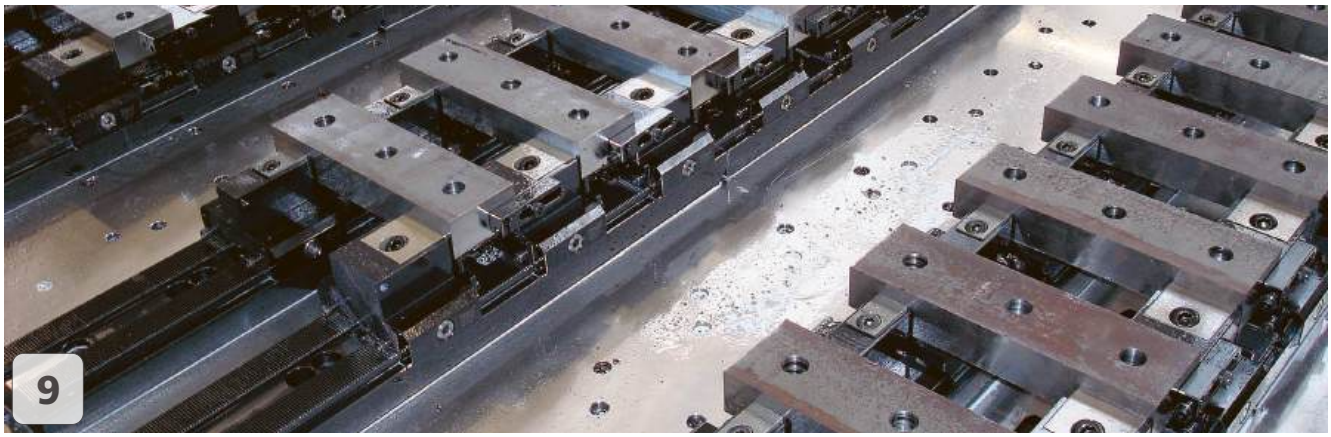

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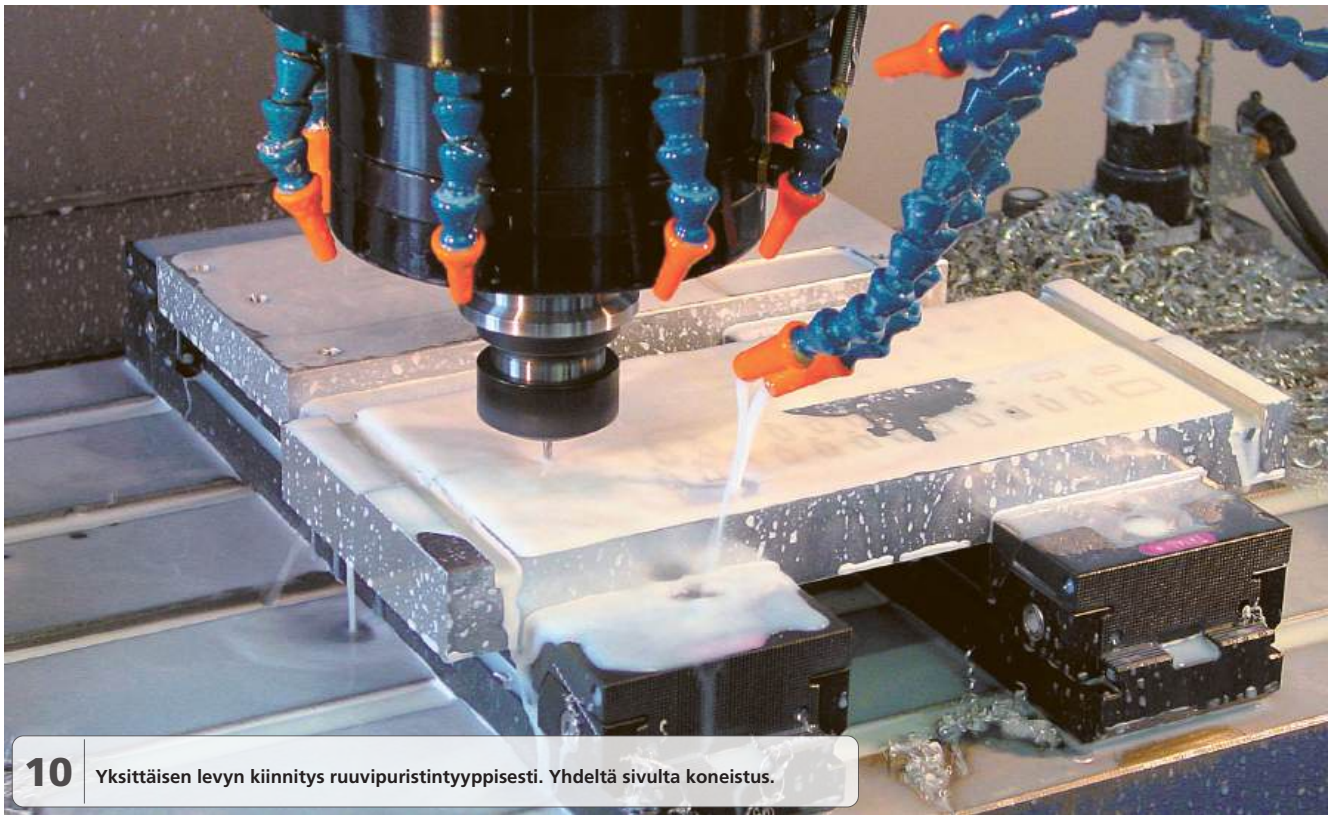
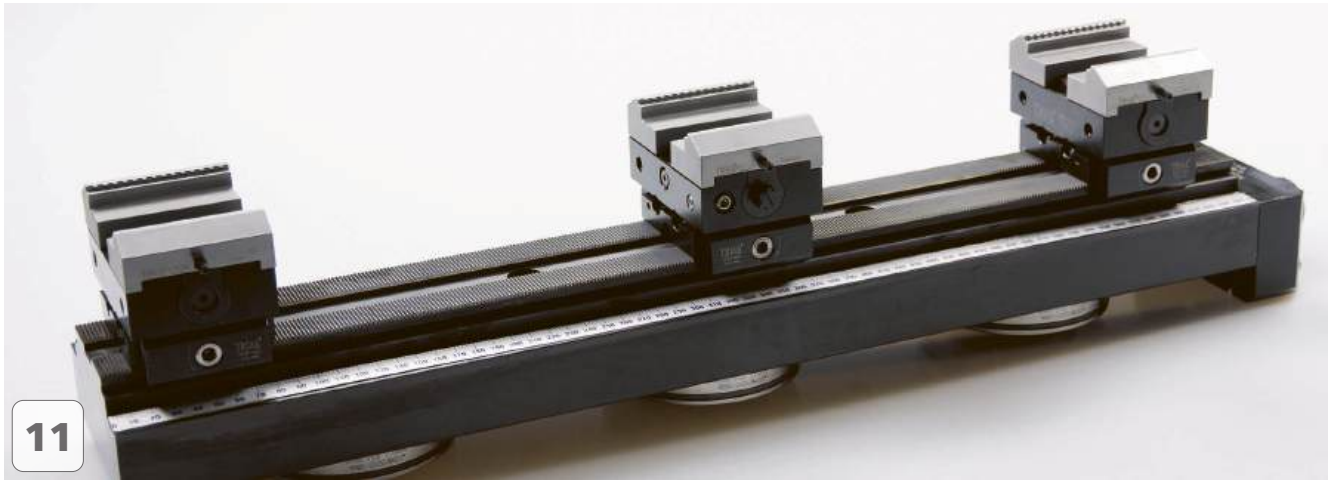
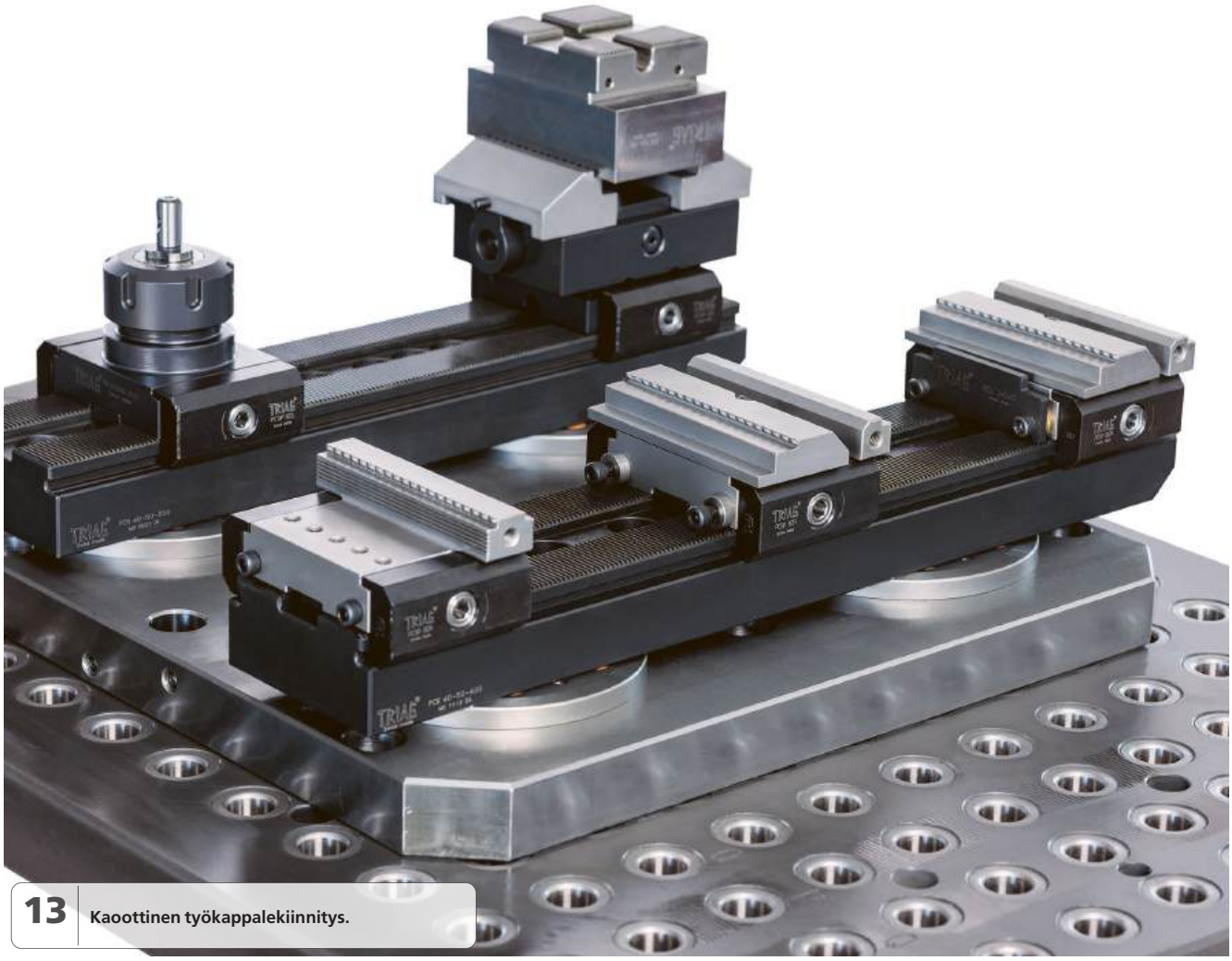


10 Yksittäisen levyn kiinnitys ruuvipuristintyyppisesti. Yhdeltä sivulta koneistus.

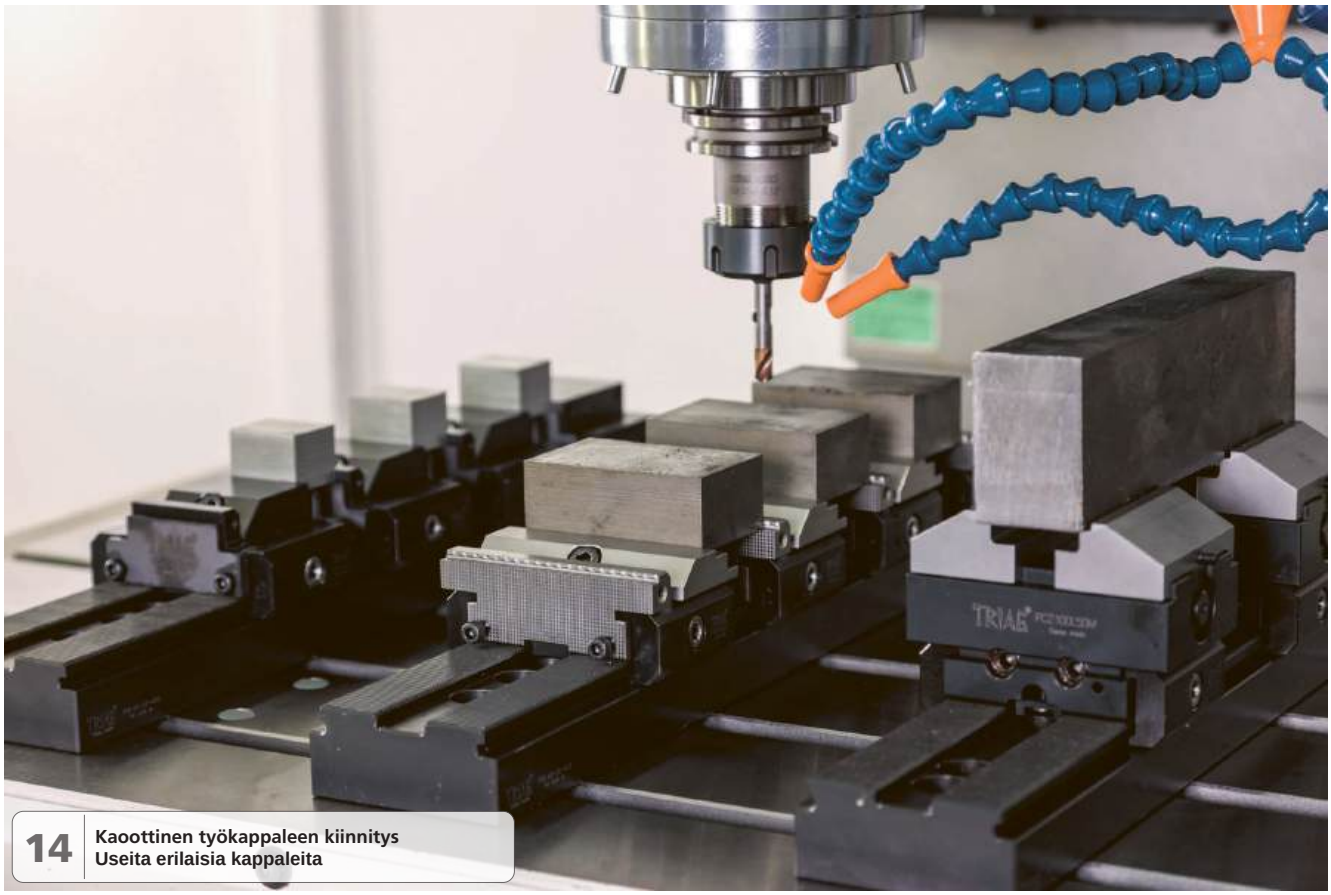


11

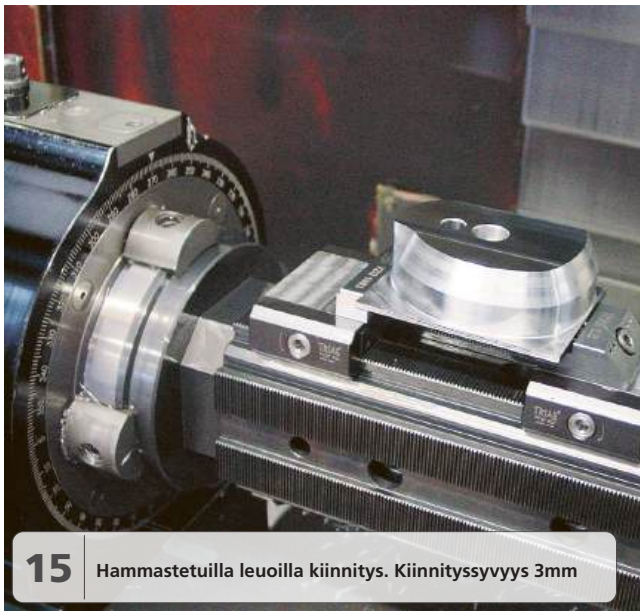
12 Erilaisia kiireellisiä työkappaleita koneistuksessa. Tornin pohjalevy, T-uramutterit ja kiilat yhteensä 9kpl



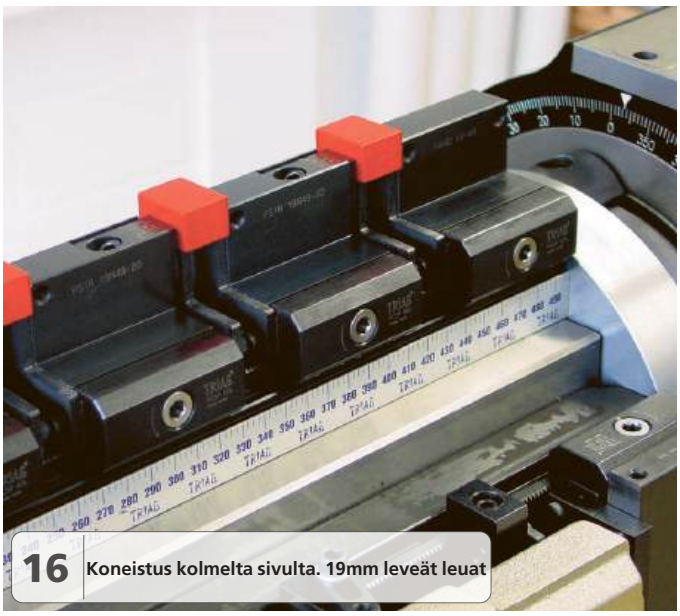
13 Kaoottinen työkappalekiinnitys.



14 Kaoottinen työkappaleen kiinnitys
Useita erilaisia kappaleita

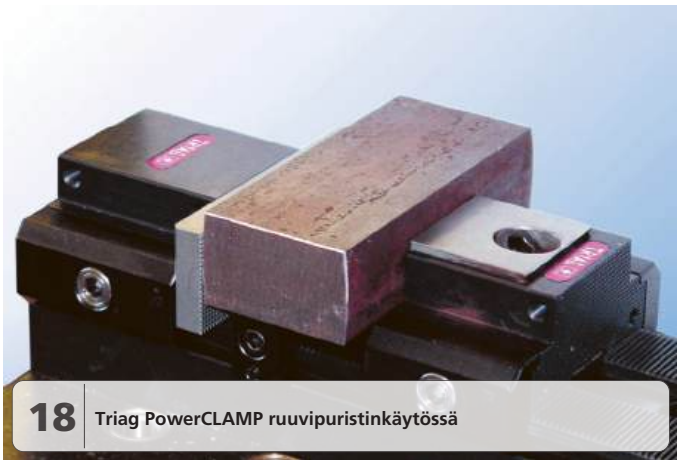


15 Hammastetuilla leuoilla kiinnitys. Kiinnityssyvyys 3mm

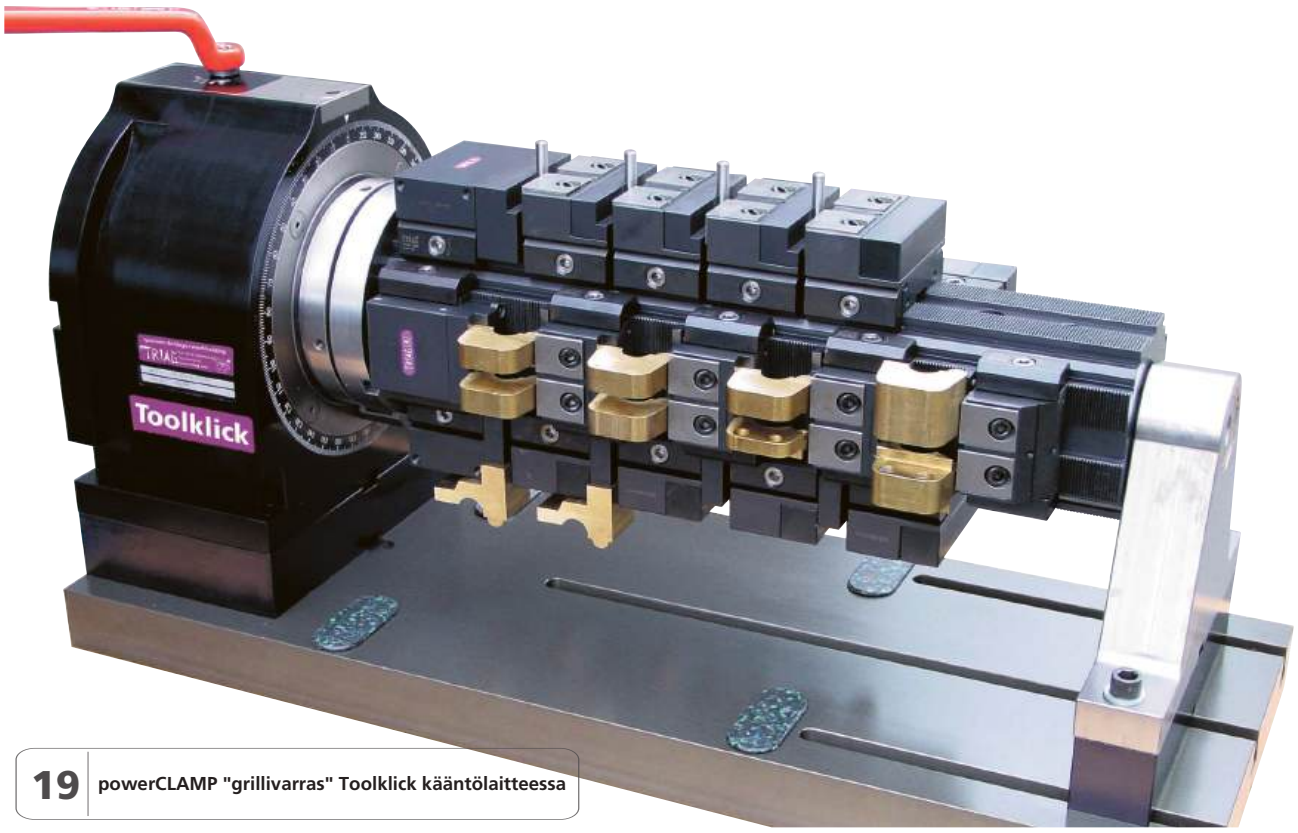


16 Koneistus kolmelta sivulta. 19mm leveät leuat

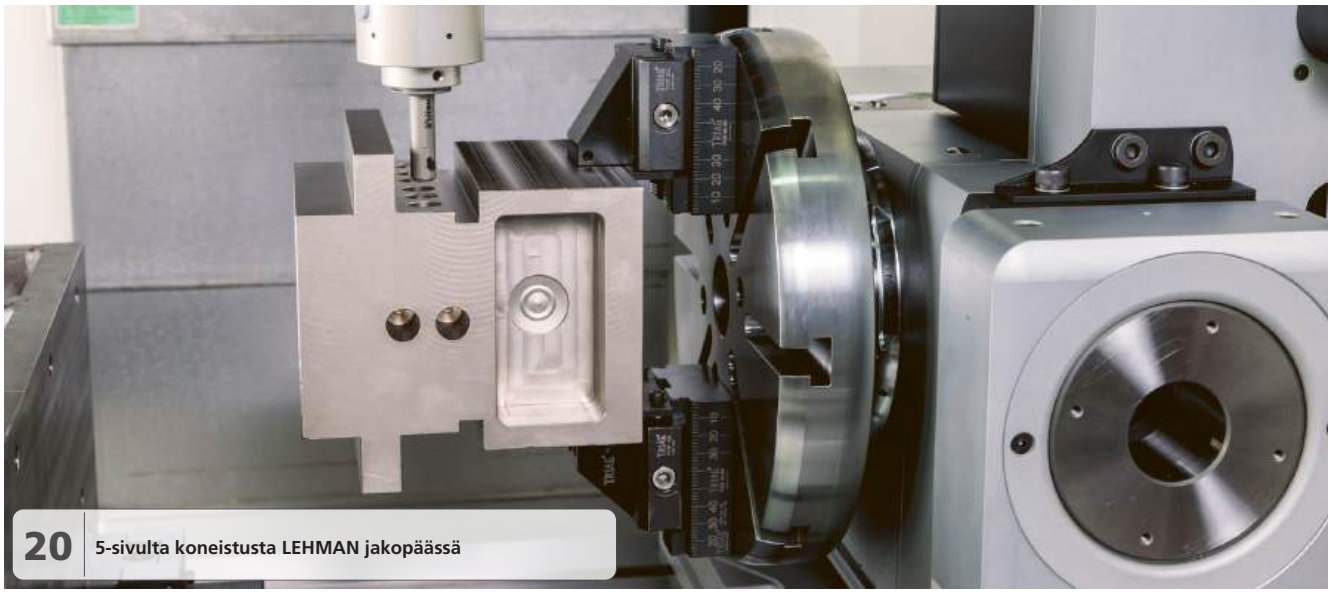
17 Käytössä 4-akselissa



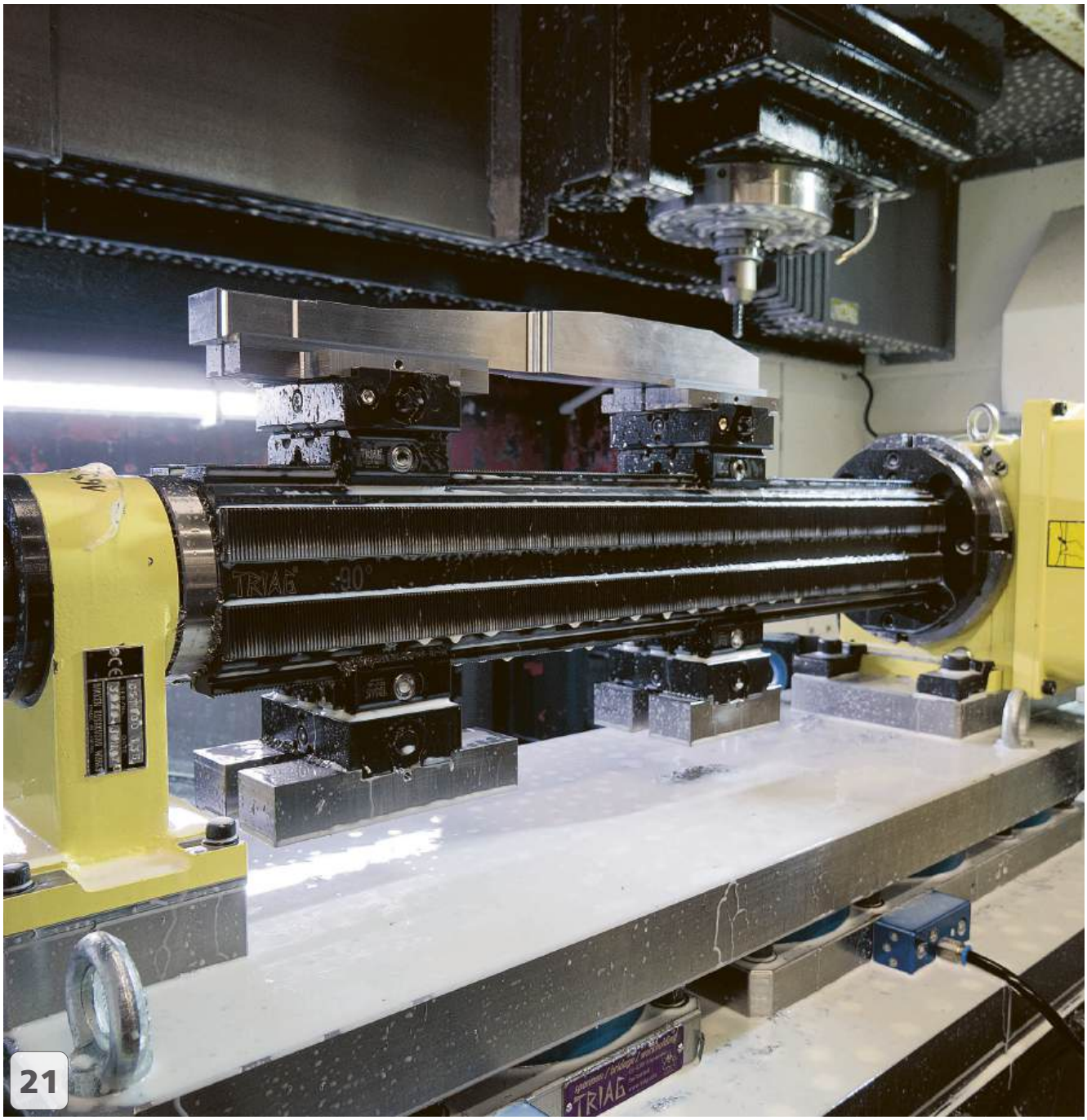
18 Triag PowerCLAMP ruuvipuristinkäytössä



19 powerCLAMP "grillivarras" Toolklick kääntölaitteessa



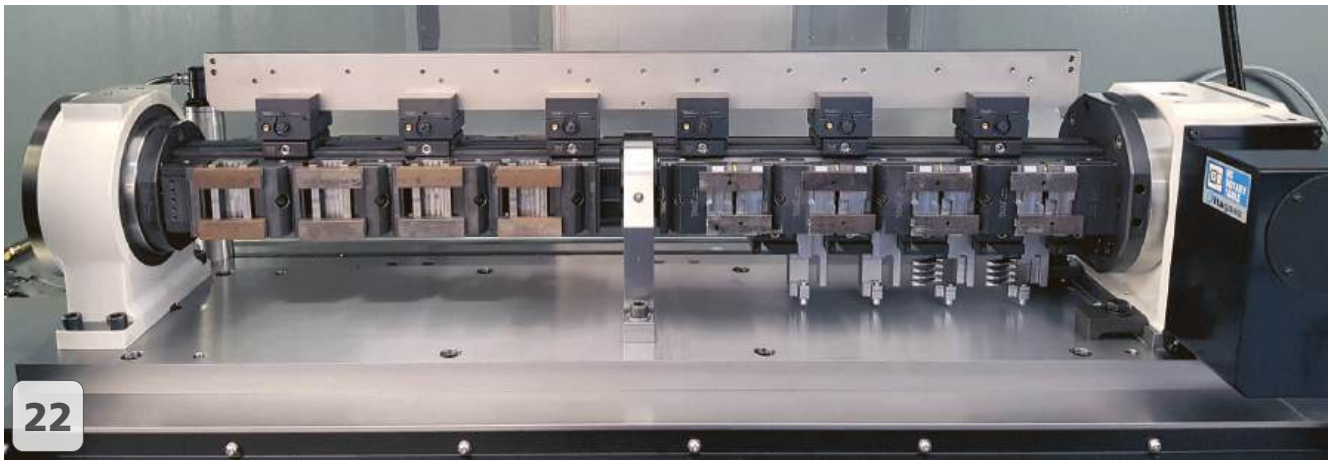
20 5-sivulta koneistusta LEHMAN jakopäässä



21

Pystykarasovellukset

(3-4 akseliset koneet)



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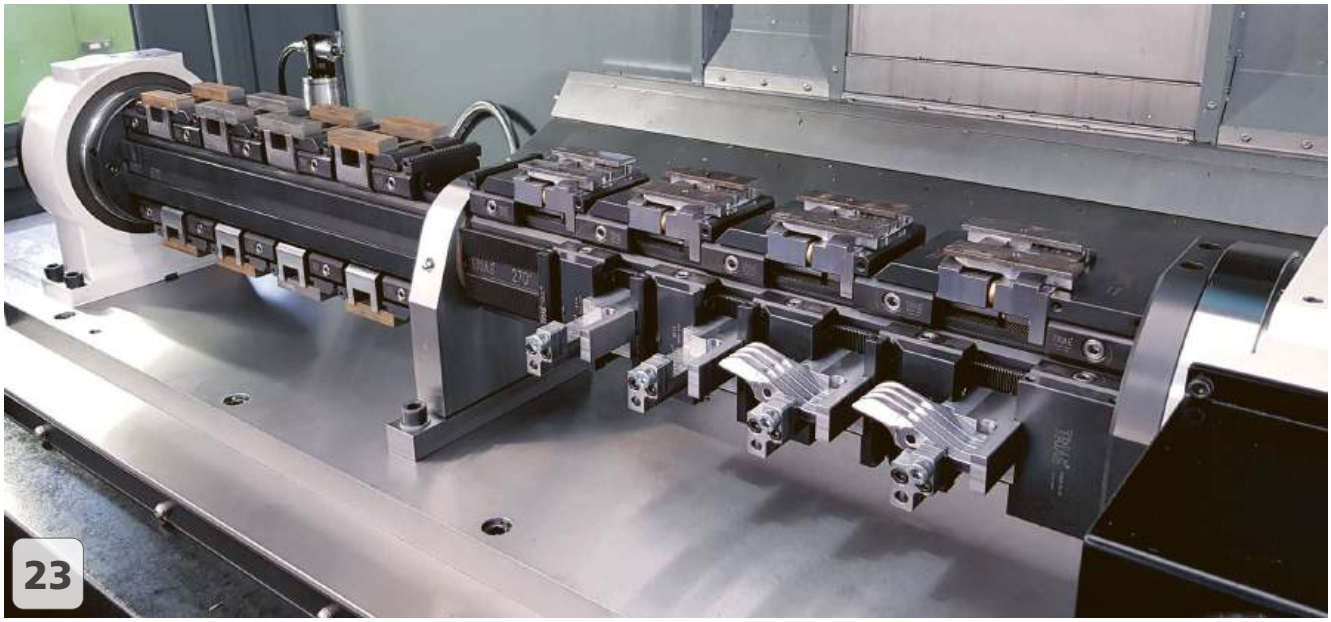

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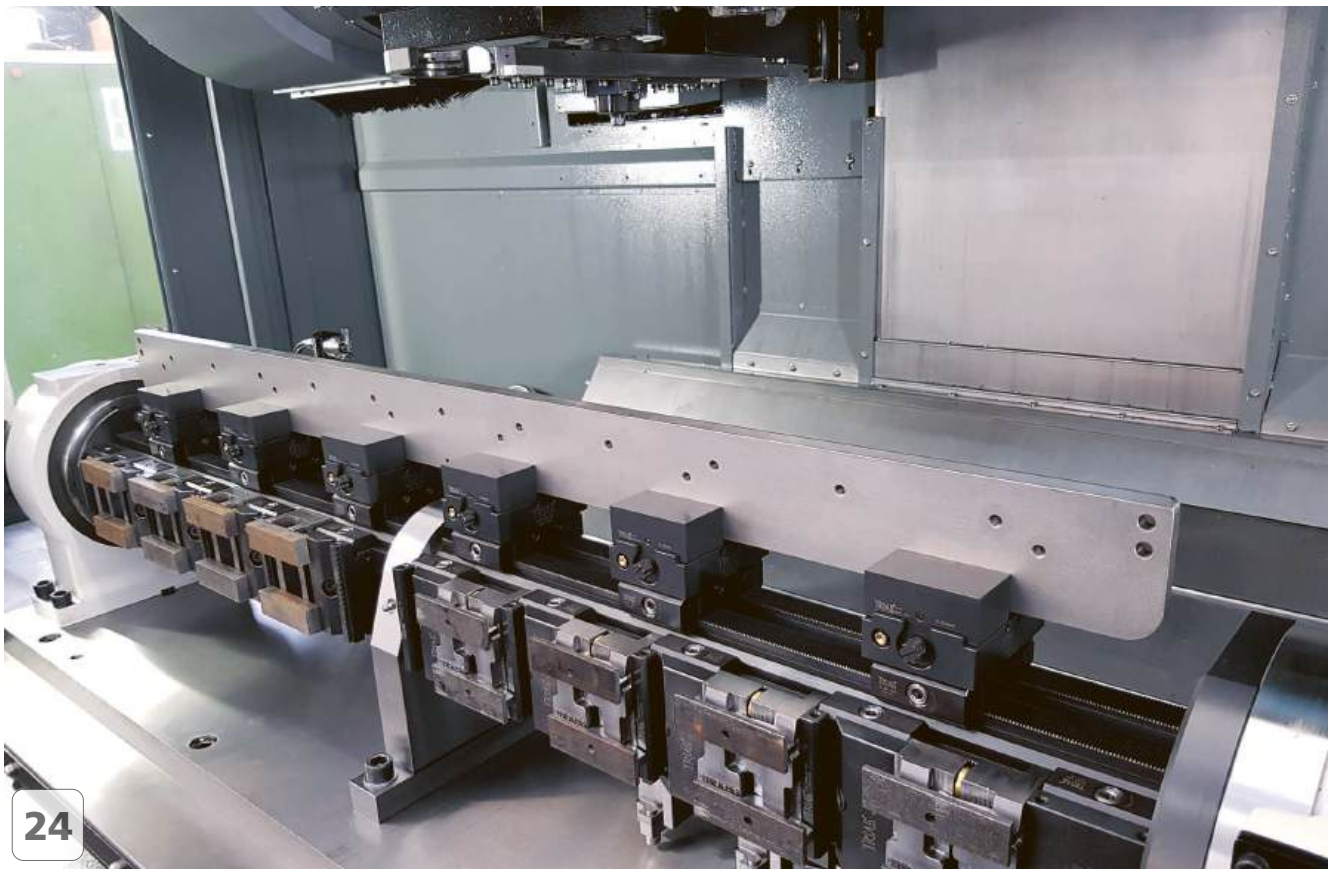

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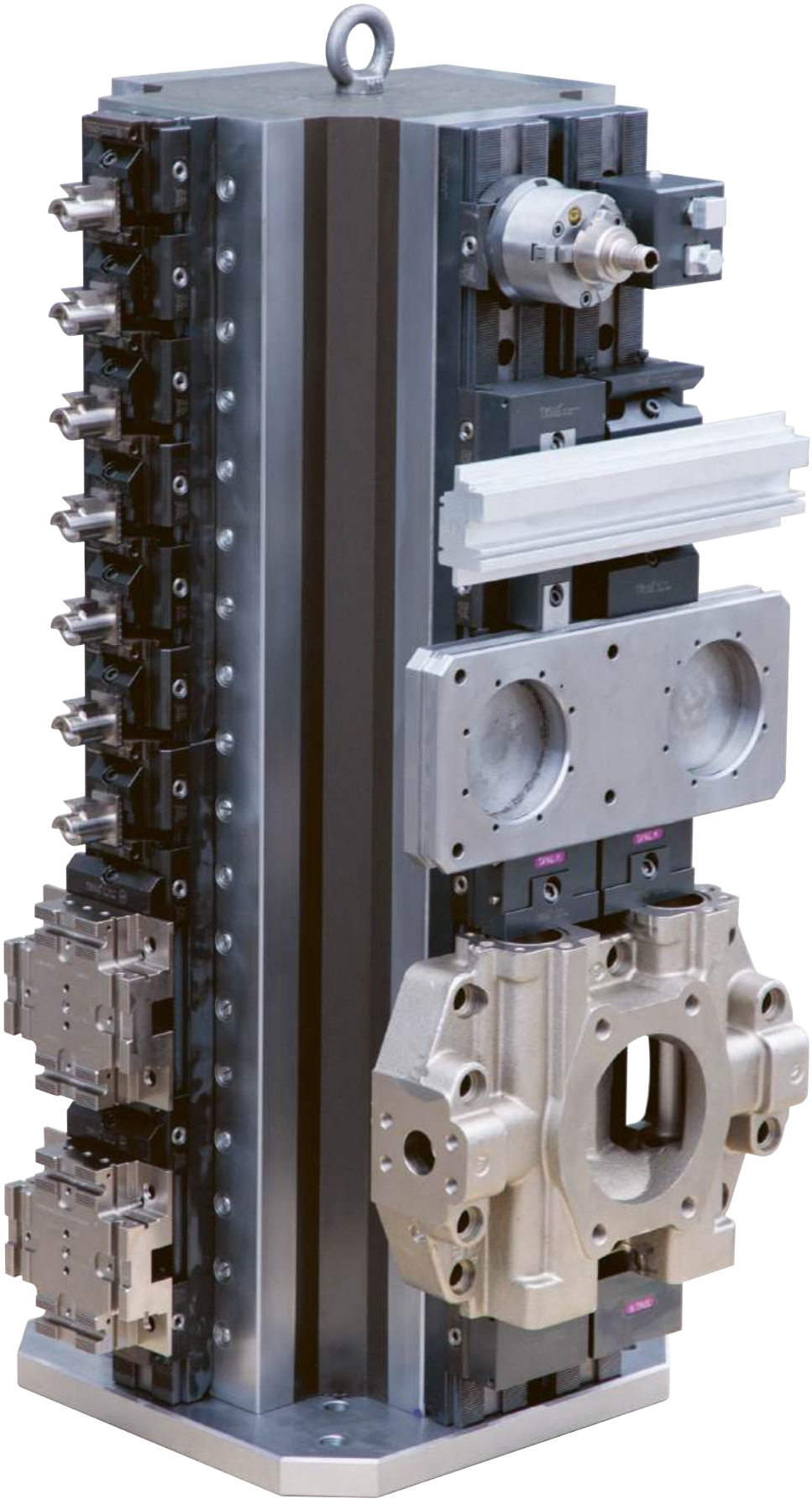
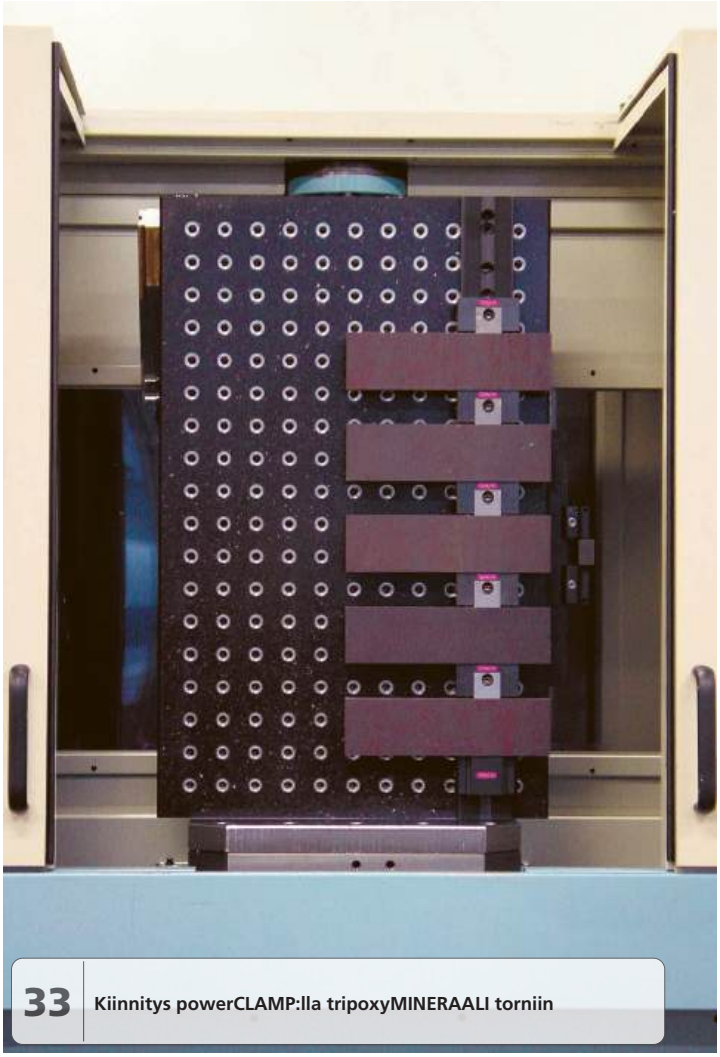


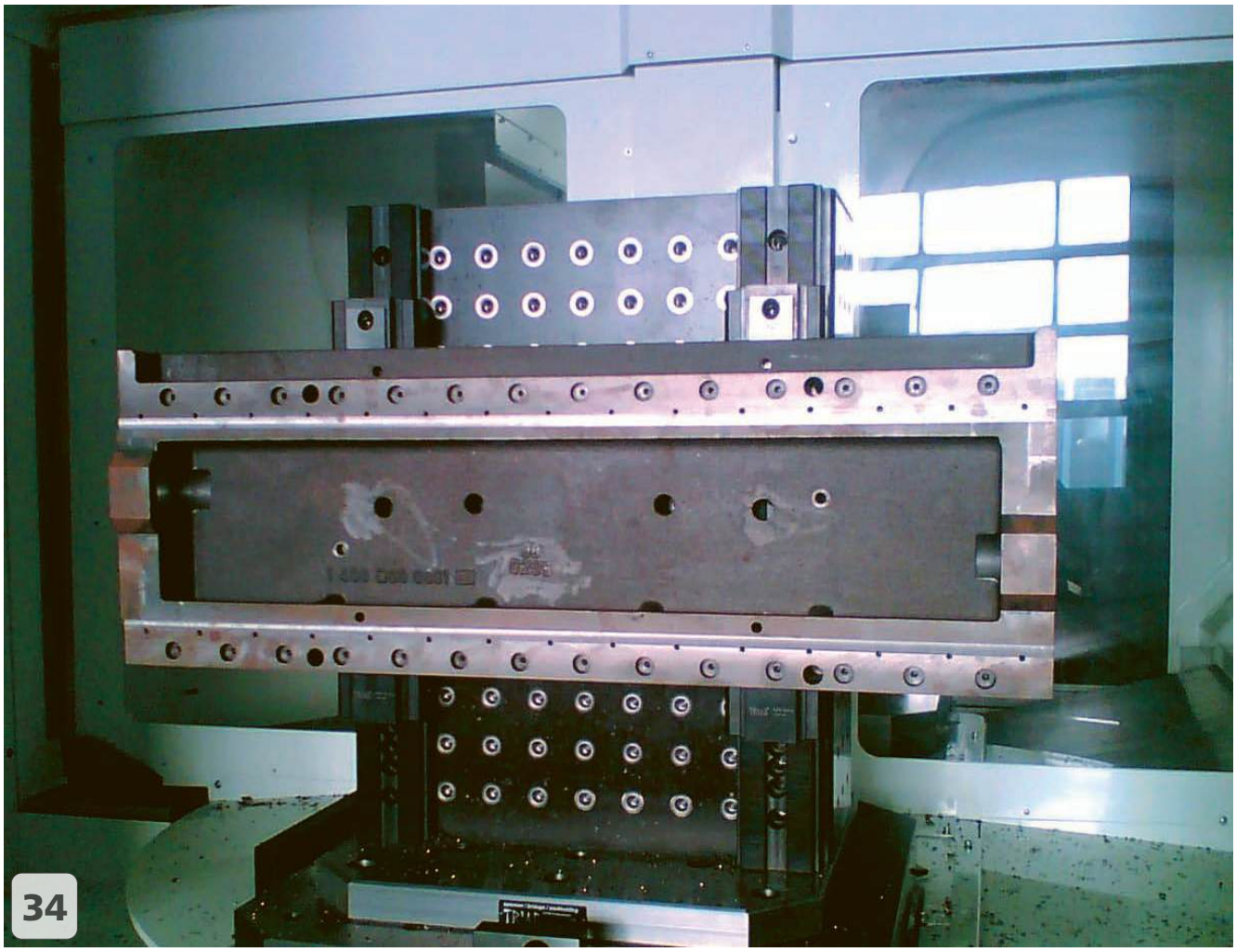
25 tripoxyMINERAALI ristitorni powerCLAMP kiskokiinnitimillä kaoottisa kiinnittämistä varten

31 tripoxyMINERAALI ristitornit powerCLAMP kiskokiinnittimillä erilaisia työkappaleita varten

32 TRIAG keskittävät puristimet erikoistornissa



33 Kiinnitys powerCLAMP:lla tripoxyMINERAALI torniin



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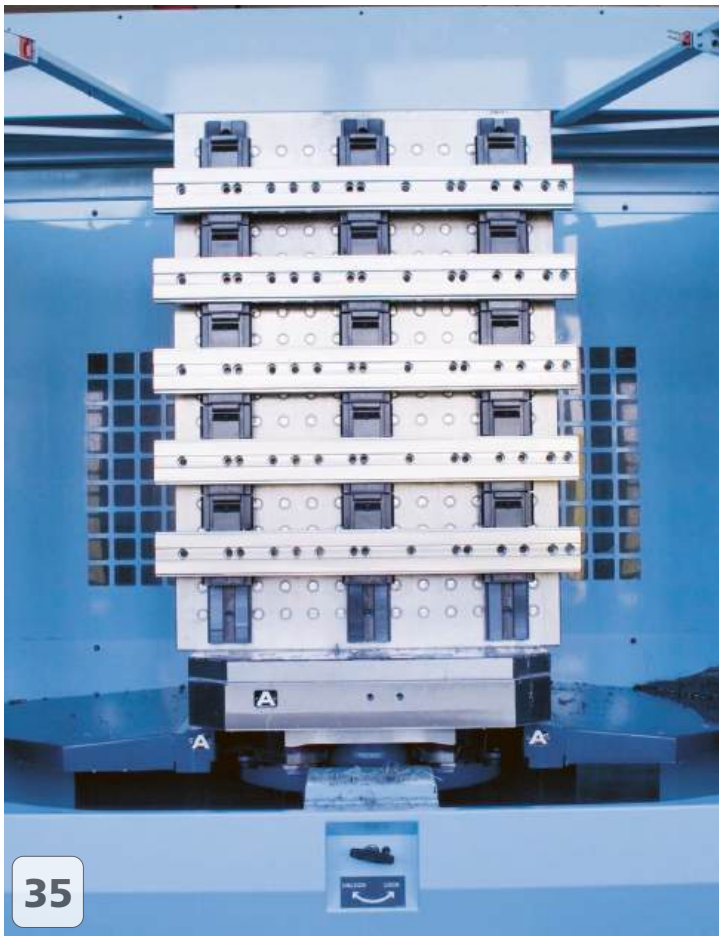

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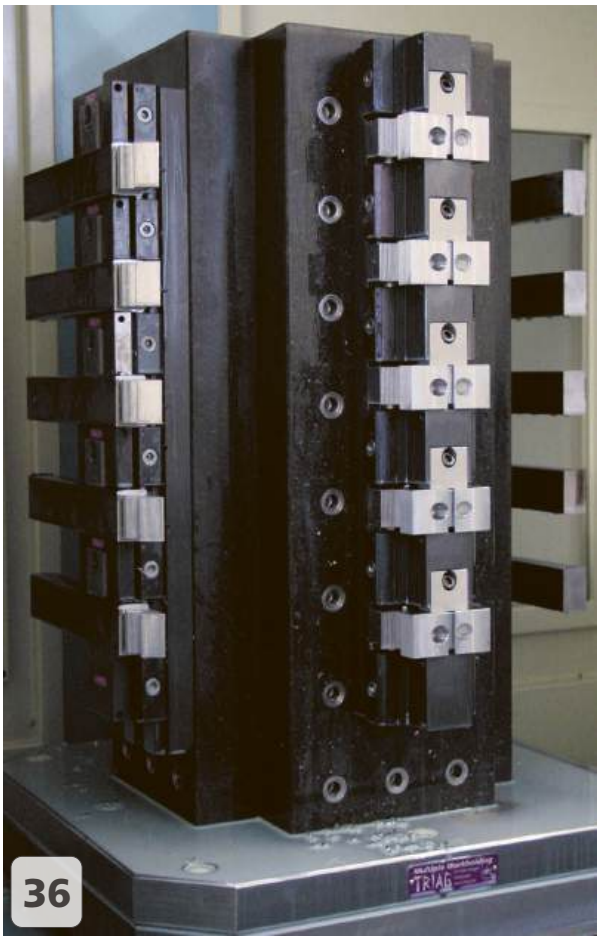

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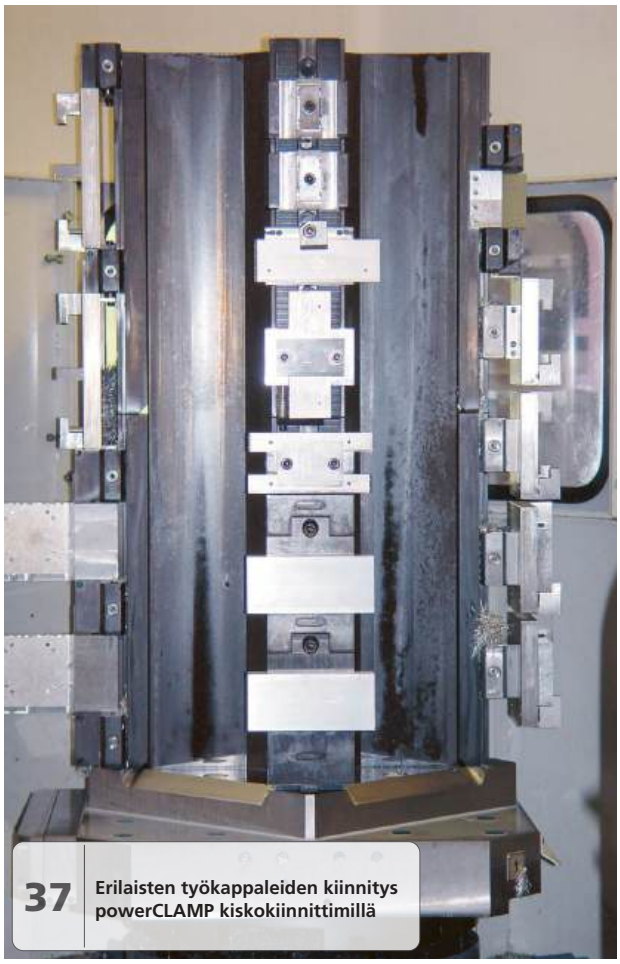
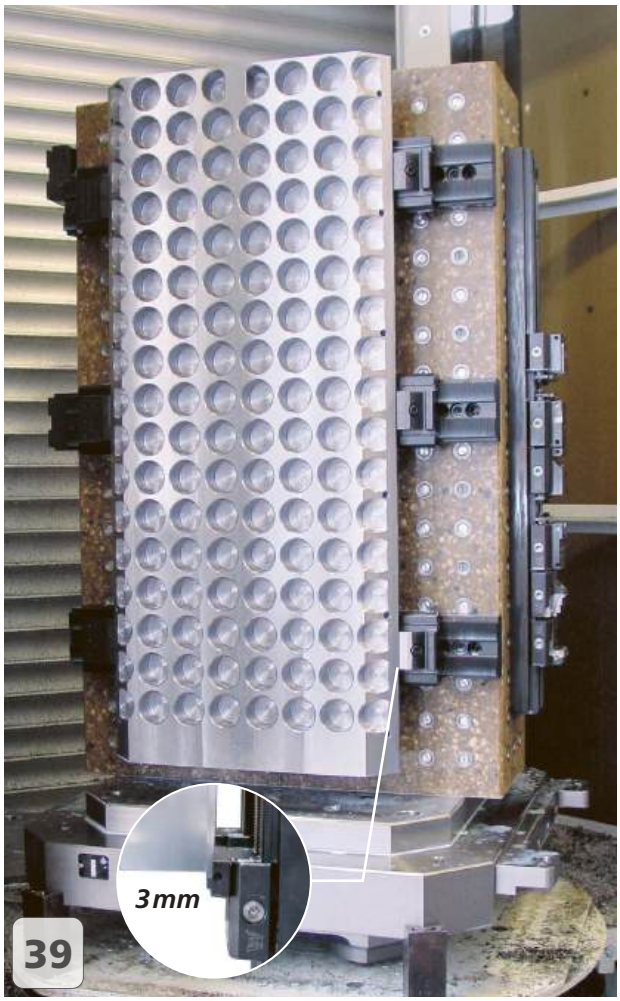


37 Erilaisten työkappaleiden kiinnitys powerCLAMP kiskokiinnittimillä

38 Kappaleen kiinnitys hammastetuilla leuoilla 3mm kiinnityssyvyydellä



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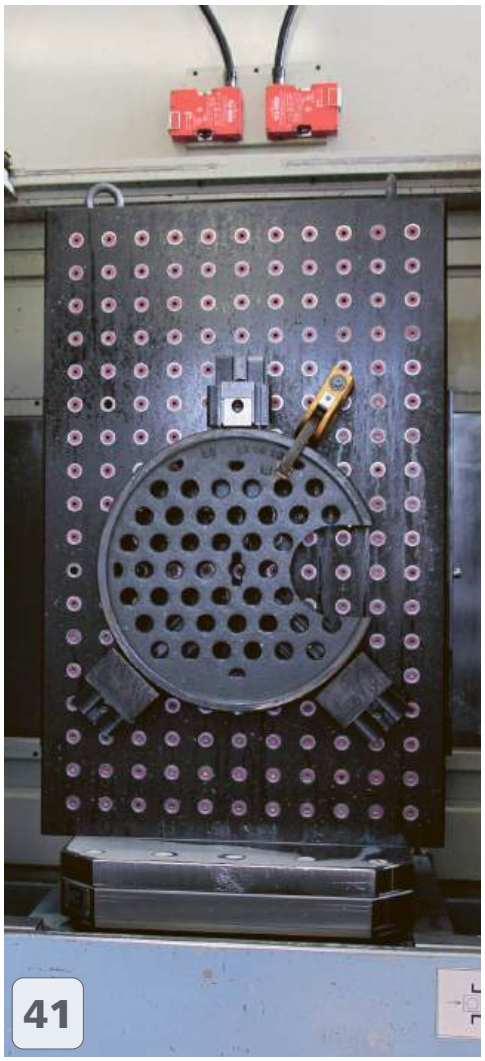
40 Kiinnitys powerCLAMP:lla tripoxy mineraalivalutorniin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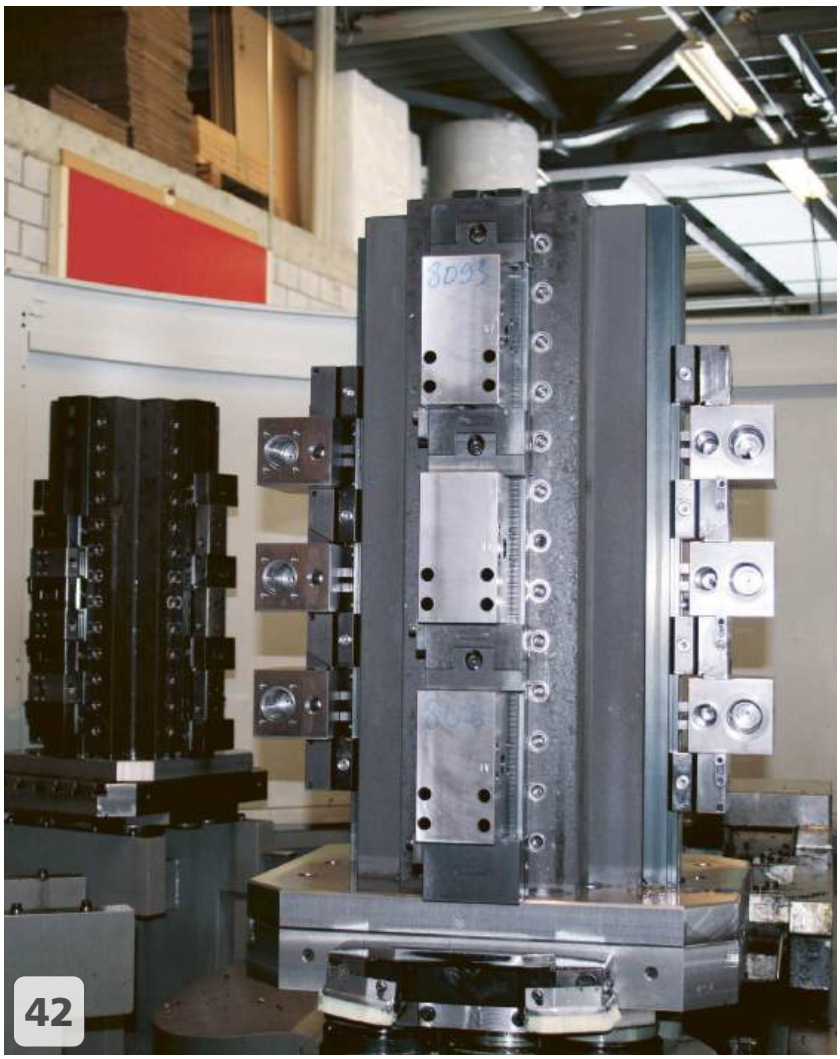
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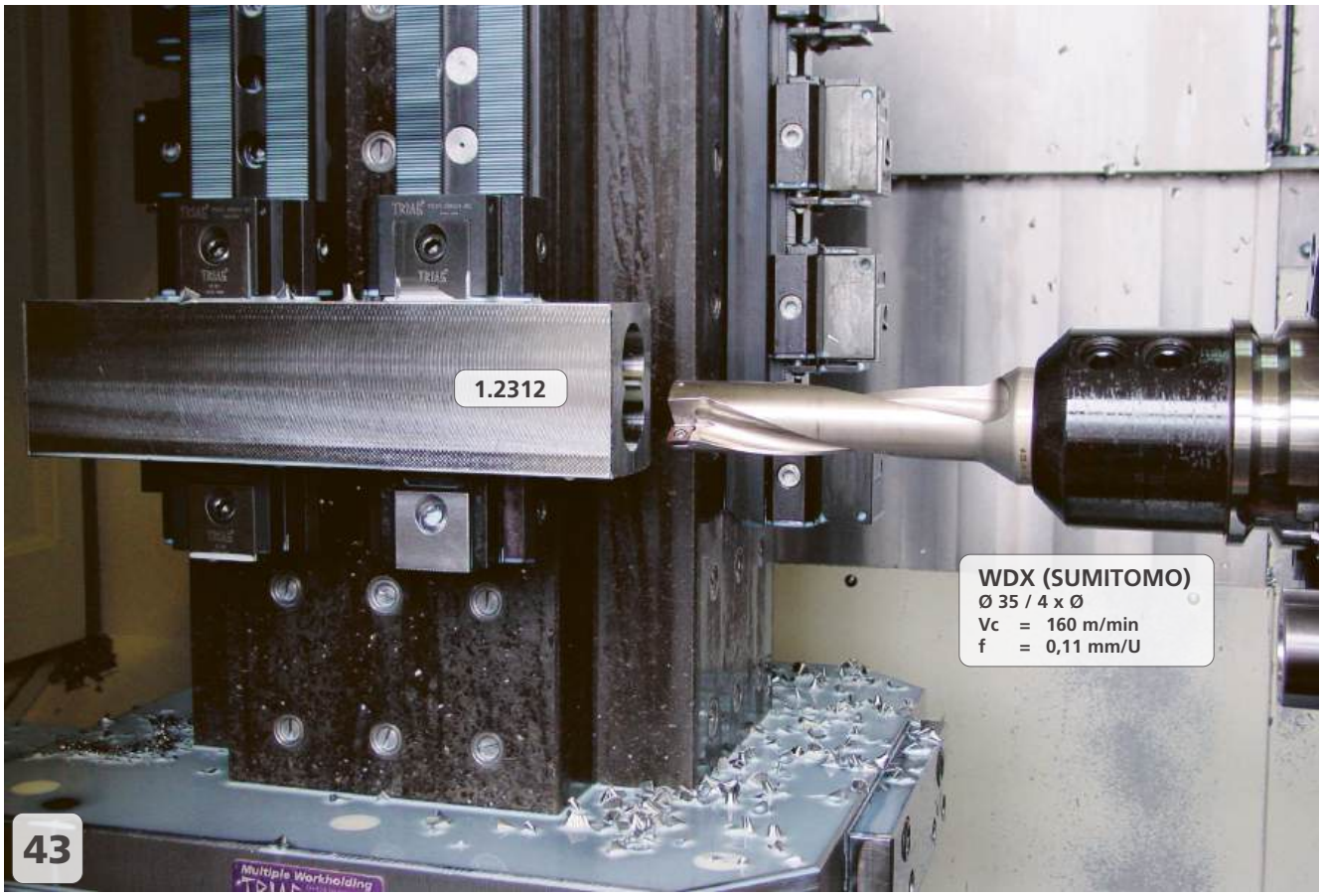
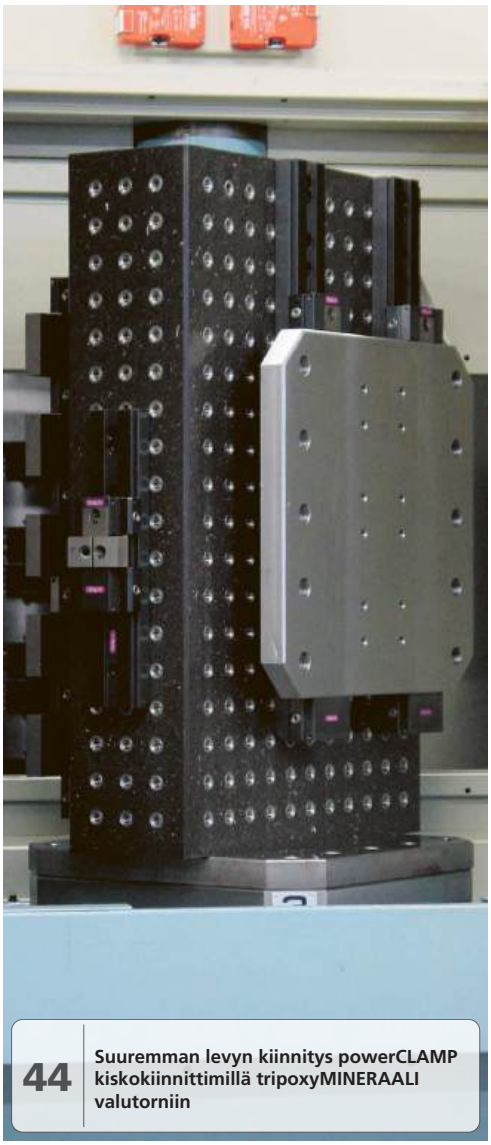
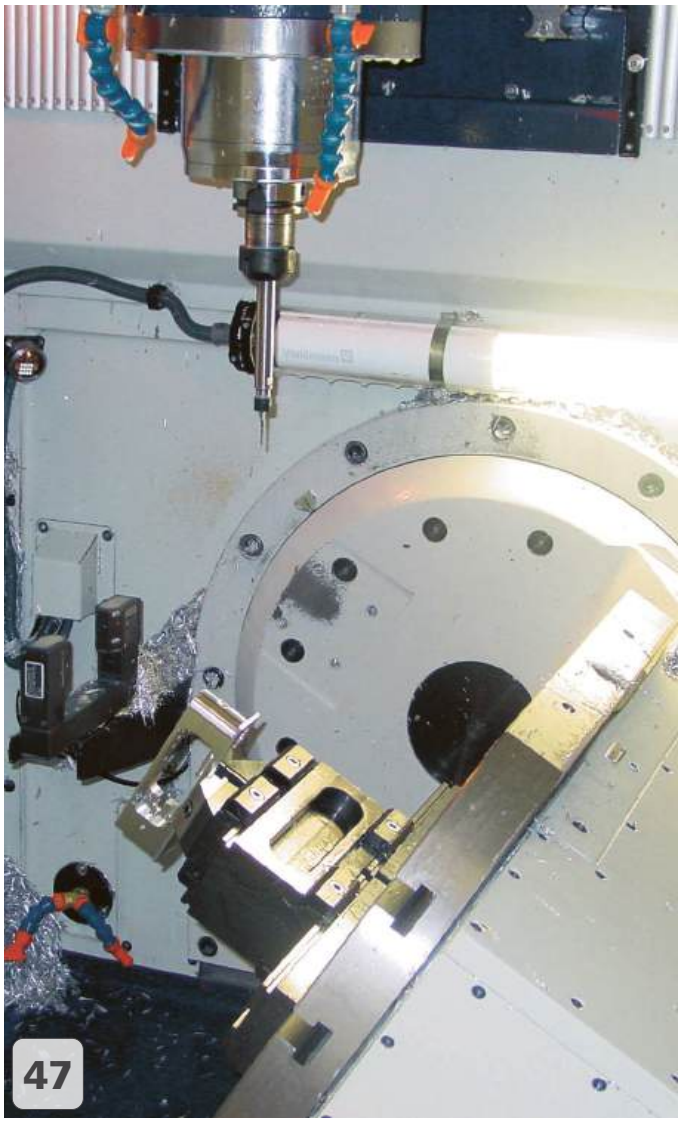

1.2312
WDX (SUMITOMO)
Ø 35 / 4 x Ø
Vc = 160 m/min
f = 0,11 mm/U
43

45 Teräskuoriset mineraalivalupilarit powerCLAMP kiskoilla siipiosien valmistukseen.



44 Suuremman levyn kiinnitys powerCLAMP kiskokiinnittimillä tripoxyMINERAALI valutorniin

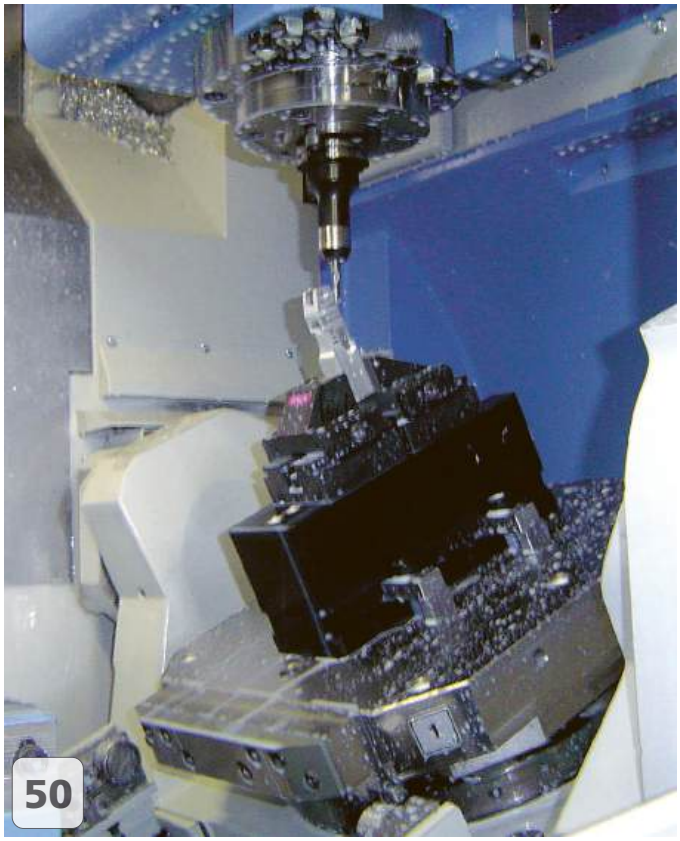
46



47

48 TRIAG keskittäväpuristin mineraalivalu-korotuspalan päällä 5-akselisessa koneessa

49 powerCLAMP kisko ja 5-akseliseen työstöön tarkoitetut kiinnitysmoduulit



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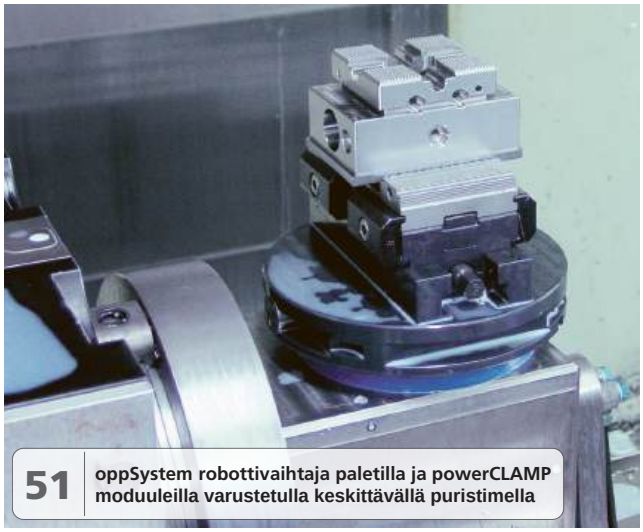
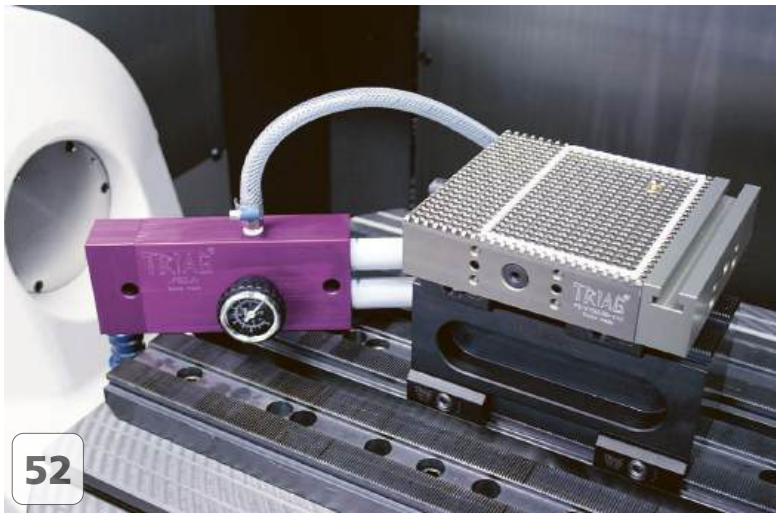


51 oppSystem robottivaihtaja paletilla ja powerCLAMP moduuleilla varustetulla keskittävällä puristimella



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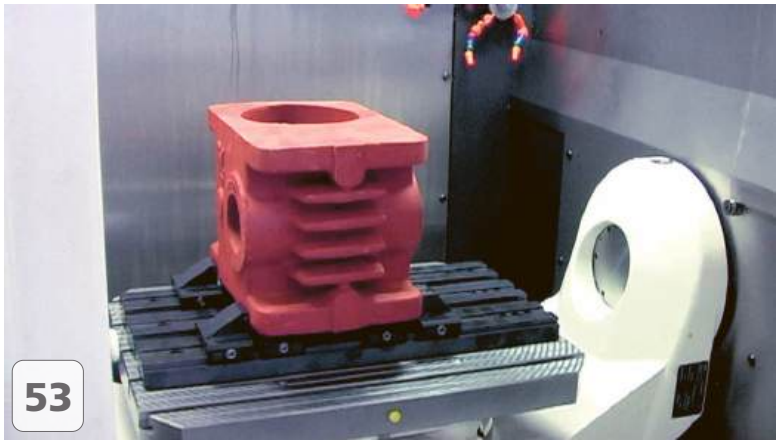

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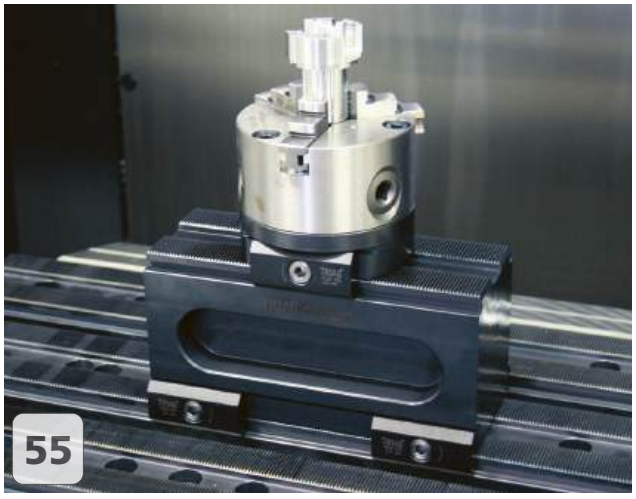

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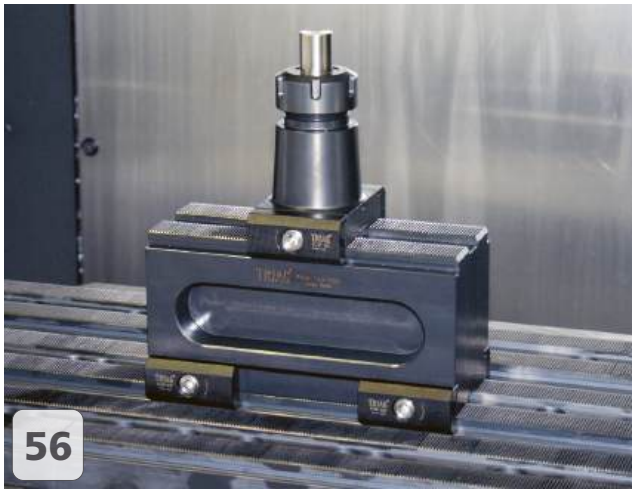

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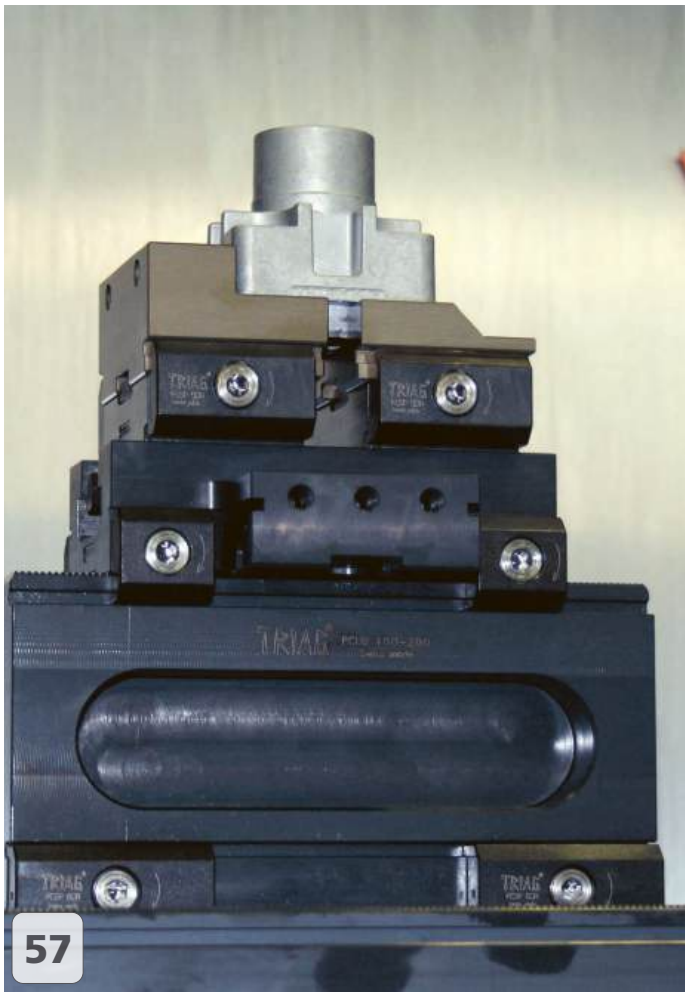
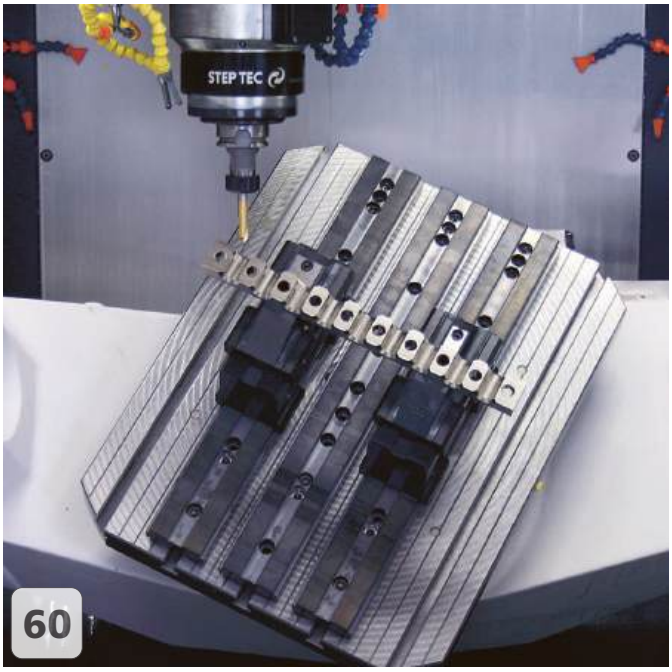


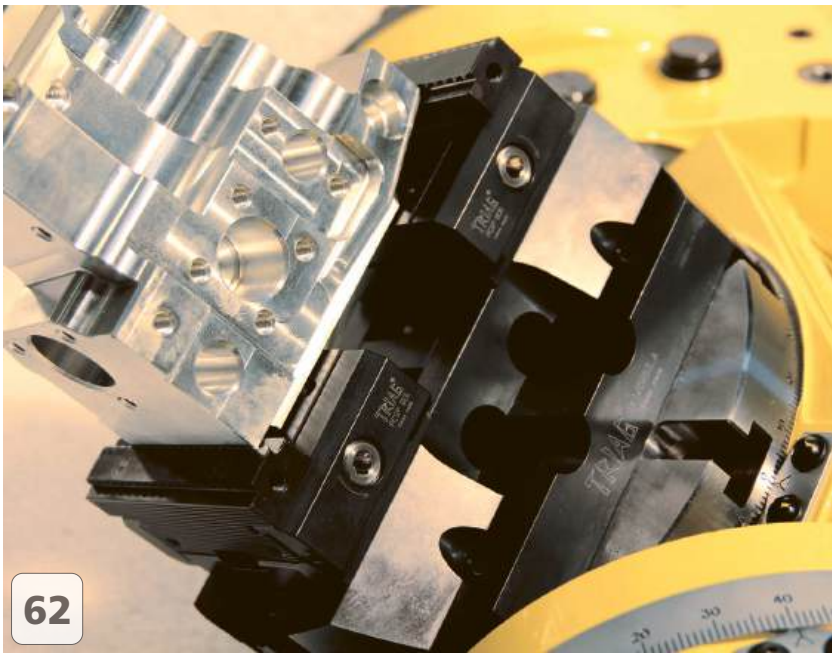
57

58

STEP TEC
59


STEP TEC
60

61


62

Modulaarinen työkappaleen kiinnitys 5-akselisilla koneilla

5-akselisia koneistuskeskuksia käytetään yhä enemmissä määrin erilaisten kappaleiden koneistuksissa. Tämä on seurausta työkappaleiden monimuotoisuuden lisääntymisestä ja siten myös vaatimustason kasvamisesta. 5-Akselinen koneistus on vaativaa. Se vaatii paljon osaamista paitsi ohjelmoinnin, myös työkalujen sekä työkappaleen kiinnittämisen osalta. Jotta osavalmistus olisi globaalisti kilpailukykyistä, on koko koneistusketjun oltava mahosimman korkeatasoista. Kone, ohjelmointi, lastuavat työkalut, työkalujen kiinnitys ja työkappaleen kiinnitys. TYökappaleiden kiinnitys on vaativaa ja vaatii myös osaavaa henkilöstöä yrityksissä,

TRIAG 5-Akselisen kiinnityksen tuomat edut:

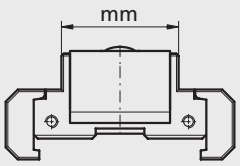
- powerCLAMP peruskiskot toimivat sekä modulaarisen kiinnityksen pohjana, että nollapistekiinnittiminä 5-akselisilla koneilla
- Olipa työkappale pieni tai iso on sen kiinnityksen oltava sellainen että sitä pääsee koneistamaan mahdollisimman monelta sivulta yhdellä kiinnityksellä. TRIAG kiinnittimiä käytettäessä, on tässä suurin rajoite itse käytettävän koneen pöytä.
- 3- ja 3+2 akselinen koneistus onnistuu aivan yhtä hyvin.
- Valittavana on yli 200 erilaista vakiokiinnitysmoduulia, aihiomoduuleja, 3-keukaistukoita, keskittäviä holkki-istukoita, alipainekiinnitysmoduuleja, magneetti-istukoita jne. Niiden kiinnitys on aina sama, helppo ja nopea powerCLAMP peruskisko.
- Nopea asetusten vaihto, helppo esivalmistella.
- Helppo pitää puhtaana, ei ylimääräisiä lastuja kerääviä T-Uria.
- Vaikka järjestelmä sopii erittäin hyvi 5-akseliseen koneistukseen, voidaan samoja kiinnitysmoduuleja ja peruskiskoja käyttää myös 3- ja 4-akselisessa koneistuksessa.
- Tämä modulaarisen järjestelmän hyödyt kasvavat valtavasti kun se integroidaan myös muihin kuin 5-akselisiin koneisiin tehtaassa.

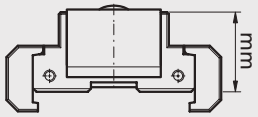
Sopii sekä pienille ...

... että isommille kappaleille!

Järjestelmä	
A	Apto Clamp
P	Power Clamp
C	Compact Clamp
M	Micro Clamp
V	Työkappaleiden kiinnitysmoduulit kiinnitinrakennukseen

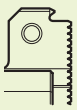
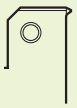
Päätymoduulit	
N	Nitrattu
D	Läpikarkaistu
Kiinnitysmoduulit	
1 2 3	Leukojen lukumäärän
-	Ei puristusleukaa

Moduulin kiinnitysleveys	
19 25 26 34 43 48 58 61 68 78 94 125	

Moduulin kiinnityskorkeus	
34 44 49 62 75 78	

P S 1 R 48 N 34 -80

Moduulin tyyppi	
A	Päätymoduuli
S	Kiinnitysmoduuli
T	Tukimoduuli
R	Aihiomoduuli

Moduulien kontaktipinta	
F	Sileä kontaktipinta
R	Kaksois-uritettu kontaktipinta
D	yksi pinta sileä, toinen pinta kaksoisuritettu
G	Päätypinta uritettu
X	Erikoismuotoilu
5X	5-akselinen kiinnitinelementti
P	 Hammastuksen alapuoleinen alue uritettu
PF	Hammastuksen alapuoleinen alue sileä
PV	 Hammastus on ulkoneva leuasta. Hammastuksen alapuoleinen alue on sileä.
P6	Hammastettu

Puristusleuan liike	
N	Alaspäin vetävä
L	Lineaarinen
-	Ei puristusleukaa

Kiinnitysleuan tyyppi	
B01 - B313	Puristusleuat
-013 - -105	Moduuli ilman puristusleukaa

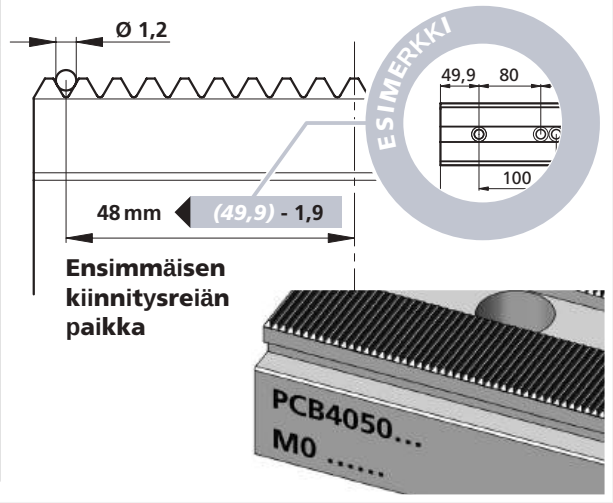
Hammastettu peruskisko on powerCLAMP-kiinnitysjärjestelmän perusta

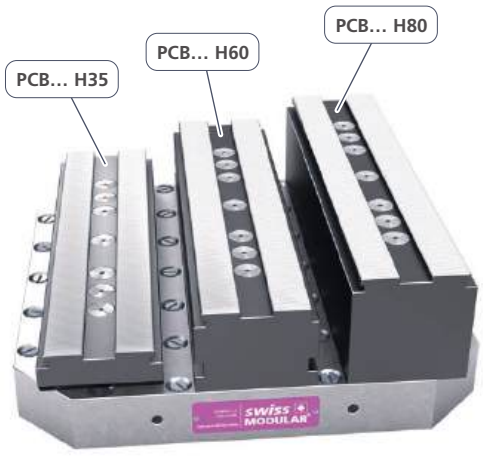
powerCLAMP peruskiskon käyttö modulaarisen kiinnittämisen lähtökohtana ja mekaanisena nollapistekiinnitysjärjestelmänä on perusta, jolla asetuskäytäntöjä voidaan vakioida tuotannossa. Tämä on ollut lähtökohtana jo suunniteltaessa tätä järjestelmää. Tätä järjestelmää käytetään myös näiden kiinnitin elementtien tuotannossa. Siksi kaikki järjestelmään syntyvät moduulit on testattu jo ennen kuin ne otetaan tuotantoon ja tiedetään niidet edut ja vahvuudet.

powerCLAMP järjestelmän yli 200 erilaista moduulia ovat siis syntyneet tarpeesta ja niiden toiminta on testattu ja hyväksi todettu. Koska kyseessä on tarkka järjestelmä, jota voidaan käyttää myös modulaarisena nollapistekiinnitysjärjestelmänä, on peruskiskon paikka aseteltavaan reikämatriisiin mahdollista varmistaa tolerointijärjestelmän avulla. Käytettäessä siis useampaa kuin yhtä kiskoa rinnakkain on hyvä varmistaa että ne ovat samalla toleranssialueella.

Toleranssi kattaa kaikki PCB kiskot

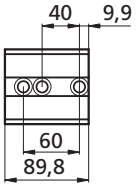
Toleranssiluokka	
P6	+0.06
P5	+0.05
P4	+0.04
P3	+0.03
P2	+0.02
P1	+0.01
P0	+0.005
M0	-0.005
M1	-0.01
M2	-0.02
M3	-0.03
M4	-0.04
M5	-0.05
M6	-0.06



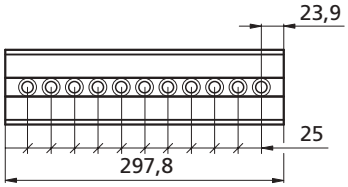


Peruskiskot, sivut 42 - 46

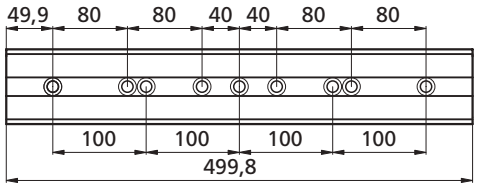
PCB6090 kg ~1,7



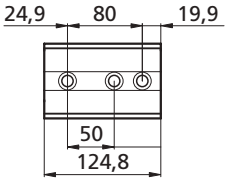
PCB25300 kg ~5,4



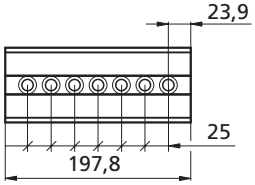
PCB4050500 kg ~9,5



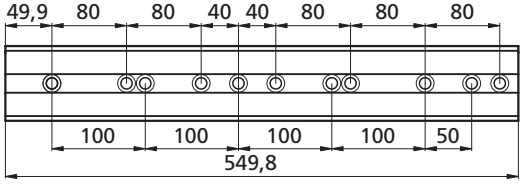
PCB4050125 kg ~2,3



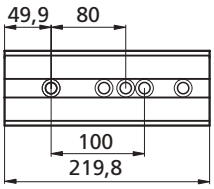
PCB25200 kg ~3,6

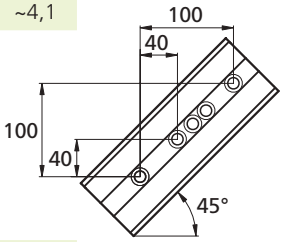


PCB4050550 kg ~10,3

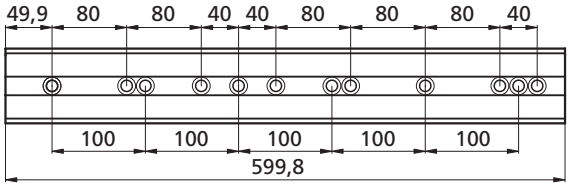


PCB4050220W2 kg ~4,1

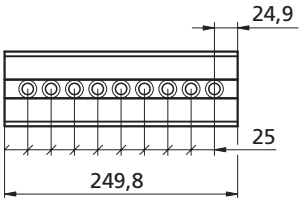


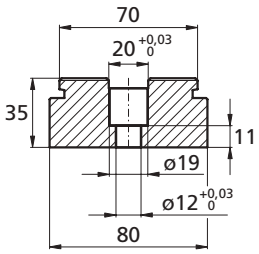


PCB4050600 kg ~11,3

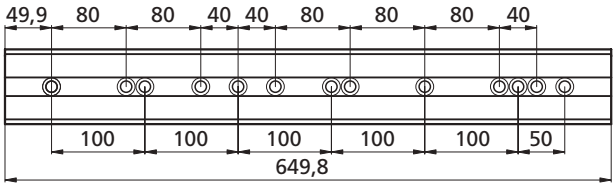


PCB2550250 kg ~4,5

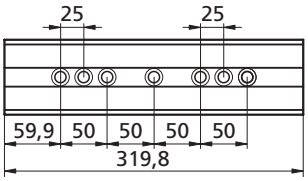


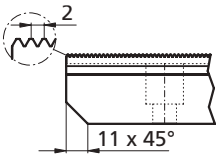


PCB4050650 kg ~12,2

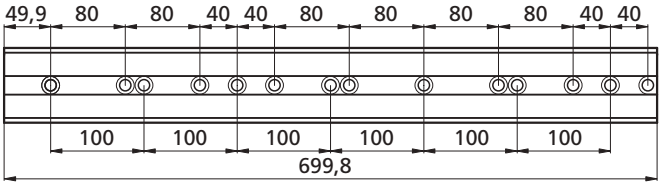


PCB50320 kg ~6,0

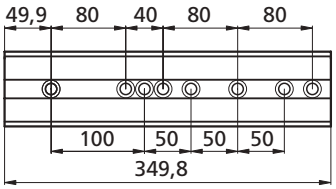




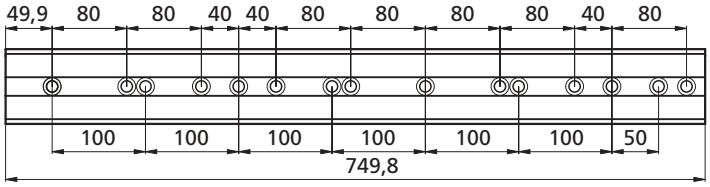
PCB4050700 kg ~13,2



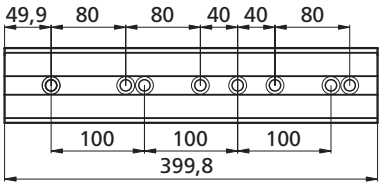
PCB4050350 kg ~6,5



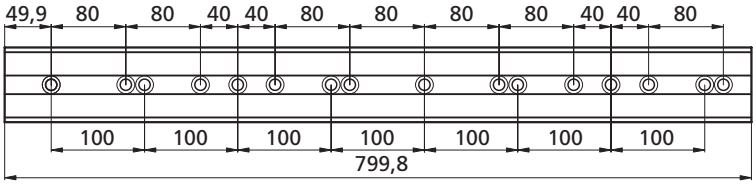
PCB4050750 kg ~14,1



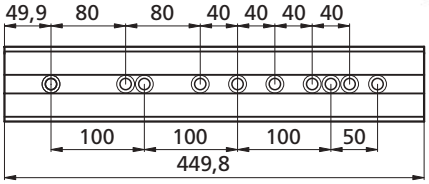
PCB4050400 kg ~7,5



PCB4050800 kg ~15,0

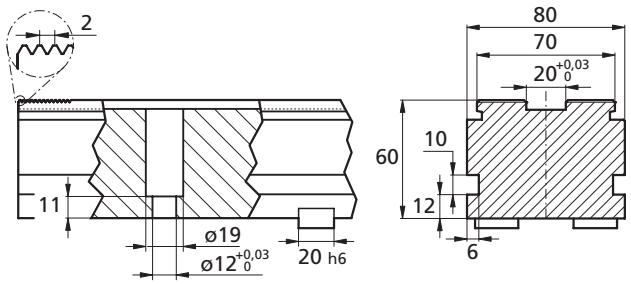


PCB4050450 kg ~8,4

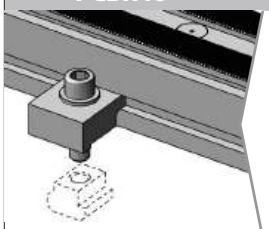


Tuumamittaiset peruskiskot

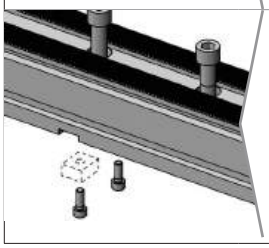
Tilausesimerkki : 2 kpl PCB4050125



PCBR40



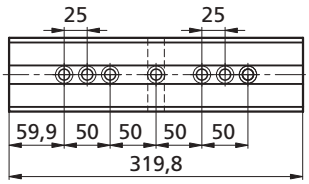
1. Kiinnitys koneen pöytään
60mm korkeat kiskot voidaan kiinnittää puristusraudoilla ja T-uramuttereilla kiskon sivusta, vapaasti haluttuun paikkaan. Esimerkiksi T-Urapöytään.



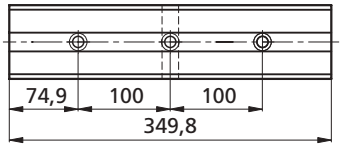
2. Kohdistus
Kohdistuskiiloilla saat asennettua kiskot tarkasti haluttuun asemaan ja suunnata kiskot helposti.

Voit silti kiinnittää ja kohdistaa nämä kiskot myös olakepulttien avulla.

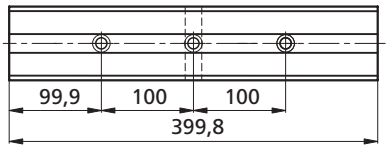
PCB50320H60	
1	1x TF190449
2	2x **M6X12ISO4762**
3	2x **SM1136-20**
kg	~10,3

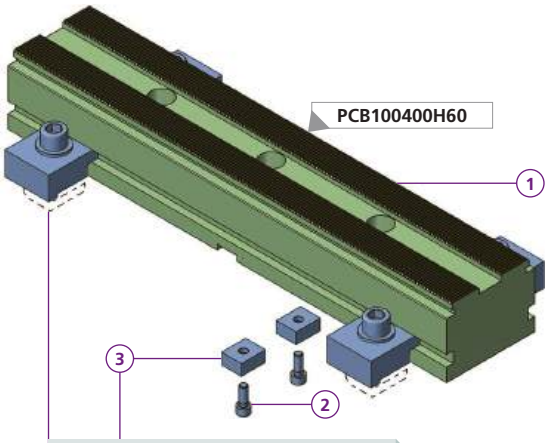


PCB100350H60	
1	1x TH170888
2	2x **M6X12ISO4762**
3	2x **SM1136-20**
kg	~11,7



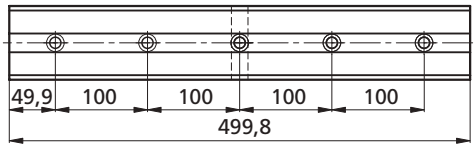
PCB100400H60	
1	1x TB140546
2	2x **M6X12ISO4762**
3	2x **SM1136-20**
kg	~13,4



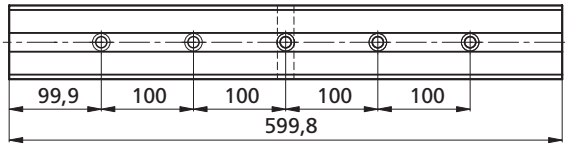


Tarvikkeet sivu 338

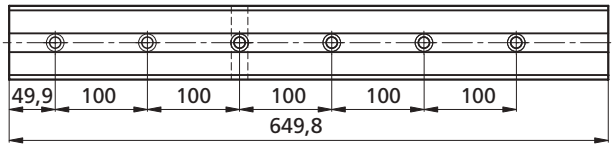
PCB100500H60	
1	1x TB140553
2	2x **M6X12ISO4762**
3	2x **SM1136-20**
kg	~16,7



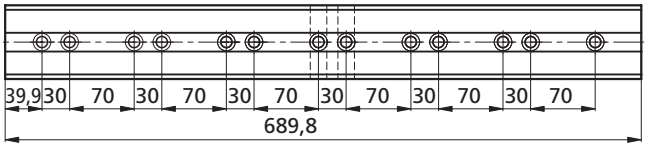
PCB100600H60	
1	1x TB140556
2	2x **M6X12ISO4762**
3	2x **SM1136-20**
kg	~20,1



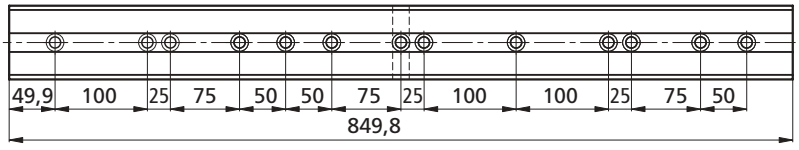
PCB100650H60	
1	1x TB140559
2	2x **M6X12ISO4762**
3	2x **SM1136-20**
kg	~21,8



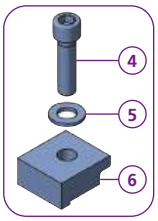
PCB100690H60	
1	1x ZL100122
2	2x **M6X12ISO4762**
3	2x **SM1136-20**
kg	~22,6



PCB100850H60	
1	1x TB140562
2	2x **M6X12ISO4762**
3	2x **SM1136-20**
kg	~27,9



PCBR40	
4	1x **M12X45ISO4762**
5	1x TN100251
6	1x TK200035
kg	~0,25



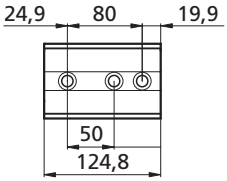
T-Uramutterit

T-Uramutterien koko riippuu koneesi pöydästä ja ne on aina tilattava erikseen.

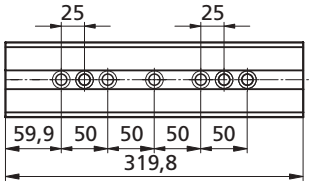
Tilausesimerkki: 1x PCB100400H60 & 2x M6X12ISO4762 & 2x SM1136-20

Tilattava erikseen

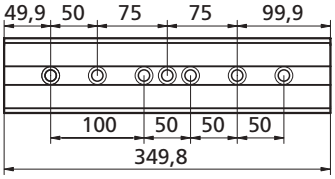
PCB4050125H80 **kg** ~5,5



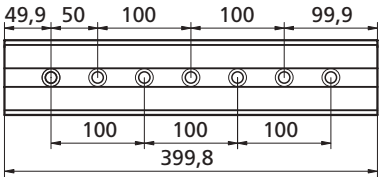
PCB50320H80 **kg** ~14,3



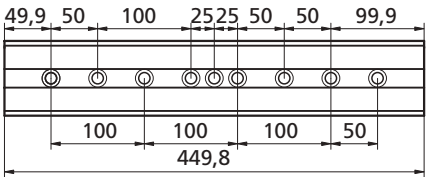
PCB50350H80 **kg** ~15,8



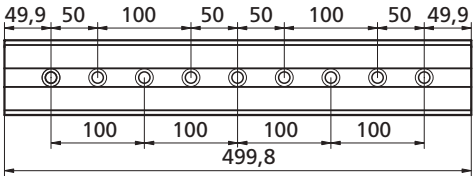
PCB50400H80 **kg** ~18,1



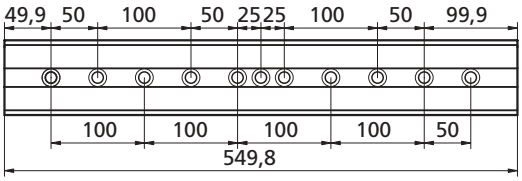
PCB50450H80 **kg** ~20,2



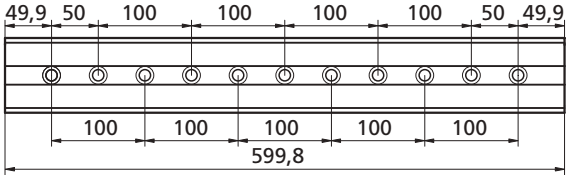
PCB50500H80 **kg** ~22,6



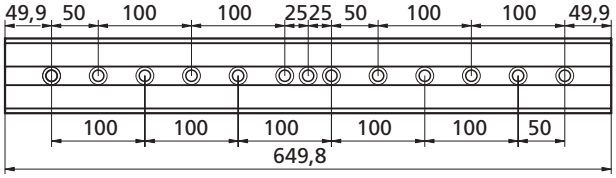
PCB50550H80 **kg** ~24,7



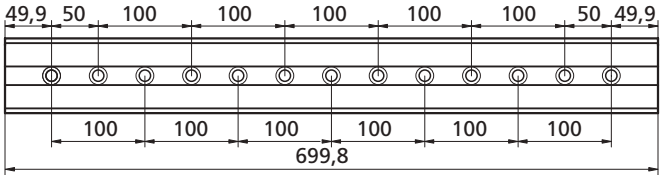
PCB50600H80 **kg** ~27,3



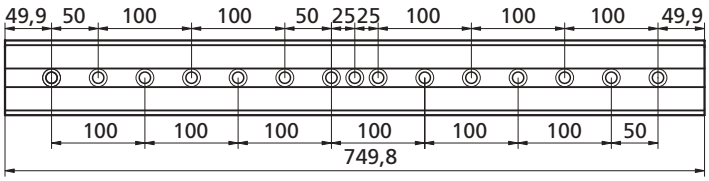
PCB50650H80 **kg** ~29,2

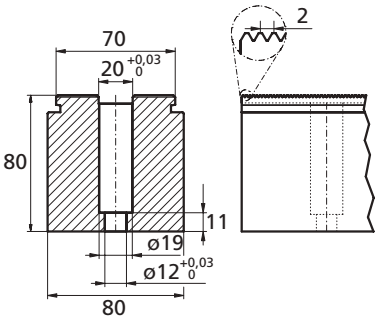


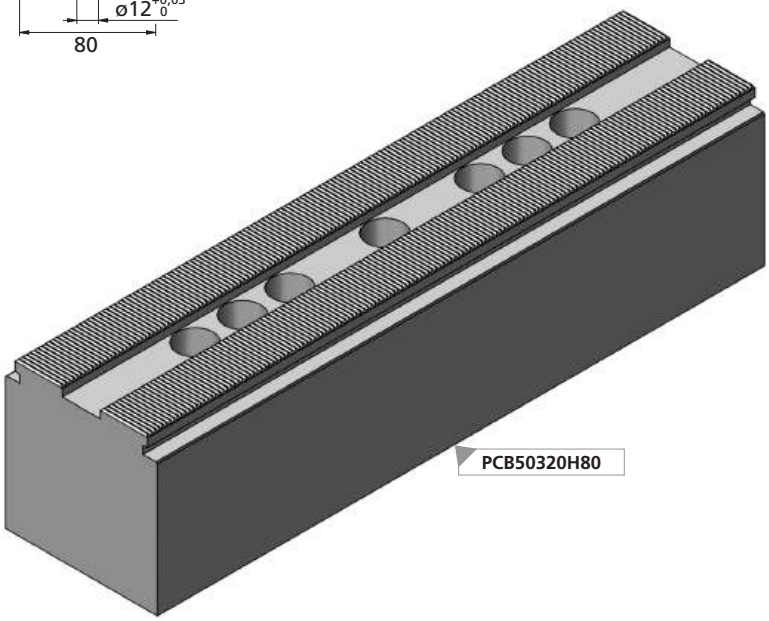
PCB50700H80 **kg** ~31,5



PCB50750H80 **kg** ~33,9

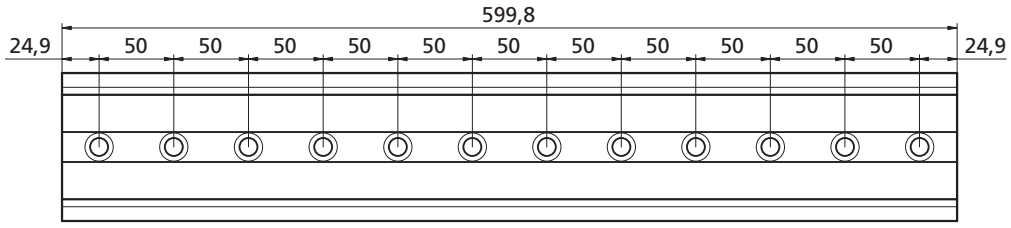




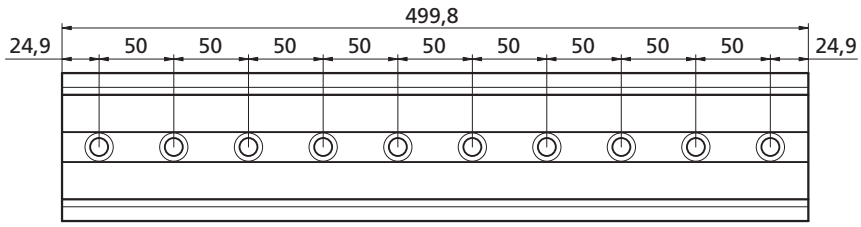


Tilausesimerkki: 1kpl PCB4050125H80

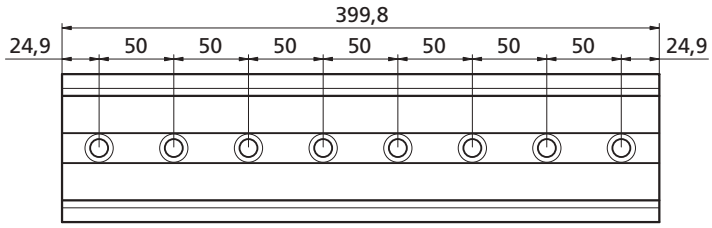
PCMB50600H175 **kg** ~39



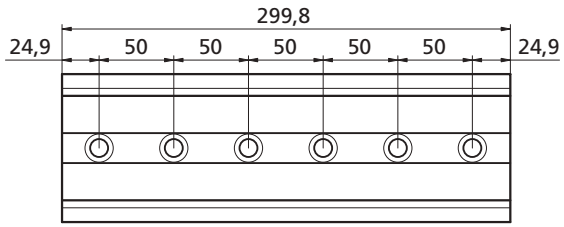
PCMB50500H175 **kg** ~34

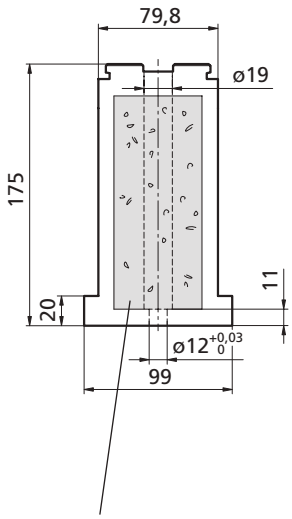


PCMB50400H175 **kg** ~27



PCMB50300H175 **kg** ~22





Mineraalivalu
Erinomaisella värinänvaimennuksella

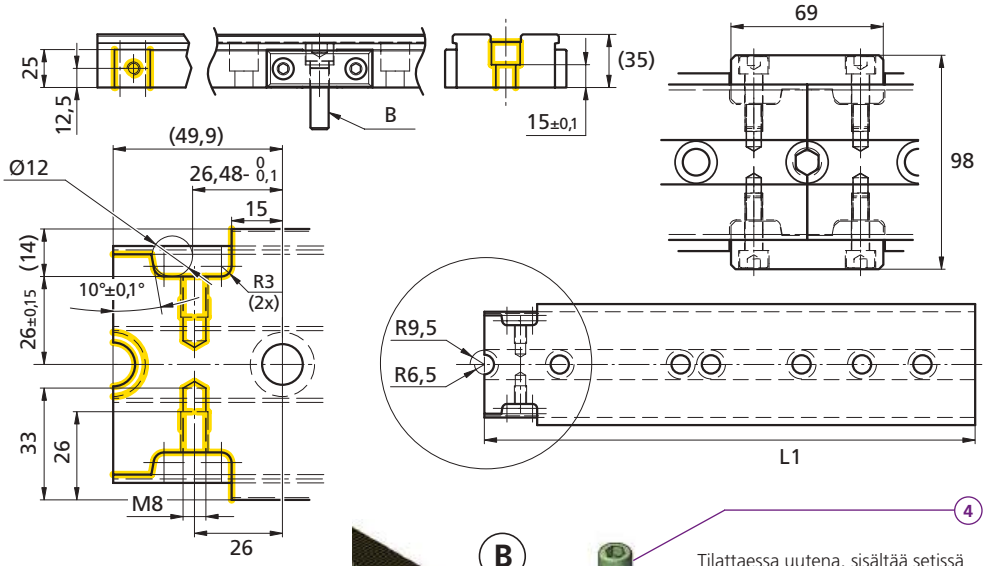
Tilausesimerkki: PCMB50600H175

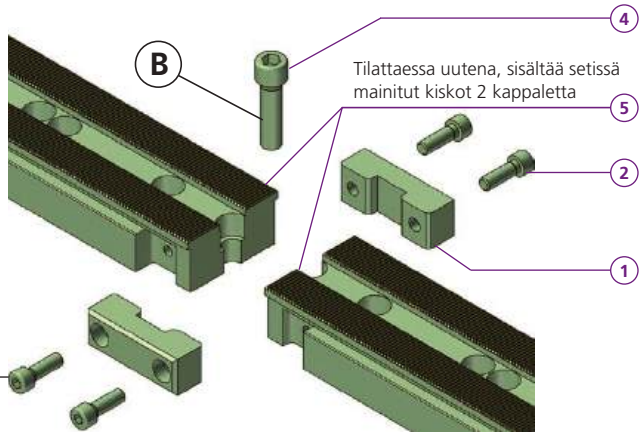
Peruskiskojen liitäntäkappale, jotka ovat kiinnitettyjä reikämatriisi levyihin tai torneihin

Näiden liitäntäkappaleiden avulla peruskiskoja voidaan pidentää.*(Liittää toisiinsa jatkaen kiskojen pituutta)* Jatkuva kitkaliitos estää mineraalivalettuun torniin kohdistuvan liiallisen rasituksen. Käyttäjän on muokattava peruskiskojen päitä alla olevan piirustuksen mukaisesti. Uudet kiskot voidaan luonnollisesti toimittaa tämä muutos jo valmiiksi koneistettuna. *(Tilattava erikseen)*

Tämä mahdollistaa kahden liitäntäkappaleen asentamisen, jotka työnnetään paikalleen ja kiristetään kiskojen asettamisen jälkeen. Lisäruuvi (B) vaimentaa asennuspintaan kohtisuorassa olevat voimat.

Yksityiskohtainen piirustus kaikkille H35-peruskiskoille liitäntäkappaleen syvennyksen koneistamiseksi olemassa oleviin kiskoihin.





Kokoonpano-ohjeet, katso video

PCBP69SET	
1	2x TW090078
2	4x **M8X25ISO4762**
4	1x **M12X45ISO4762**
kg	~0,4

PCB4050250KP	
5	
L1	= 250
kg	~5,1

PCB4050400KP	
5	
L1	= 400
kg	~7,9

PCB4050450KP	
5	
L1	= 450
kg	~8,9

PCB4050500KP	
5	
L1	= 500
kg	~9,9

PCB4050650KP	
5	
L1	= 650
kg	~12,8

PCB4050700KP	
5	
L1	= 700
kg	~13,8

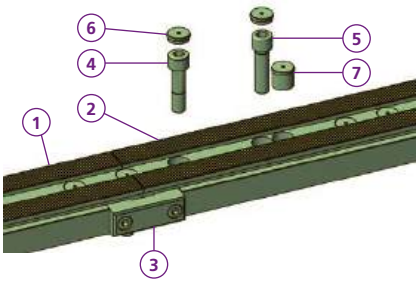
Tilausesimerkki: PCB4050250KP

PCB850SET	
1	1x **PCB4050400KP**
2	1x **PCB4050450KP**
3	1x **PCBP69SET**
4	4x **TWPAS1240**
5	5x **M12X40ISO4762**
6	9x **PCPF16L6**
7	9x **PCPF16L18**
kg	~17,1

PCB900SET	
1	1x **PCB4050650KP**
2	1x **PCB4050250KP**
3	1x **PCBP69SET**
4	4x **TWPAS1240**
5	6x **M12X40ISO4762**
6	10x **PCPF16L6**
7	8x **PCPF16L18**
kg	~18,2

PCB950SET	
1	1x **PCB4050700KP**
2	1x **PCB4050250KP**
3	1x **PCBP69SET**
4	4x **TWPAS1240**
5	6x **M12X40ISO4762**
6	10x **PCPF16L6**
7	9x **PCPF16L18**
kg	~19,1

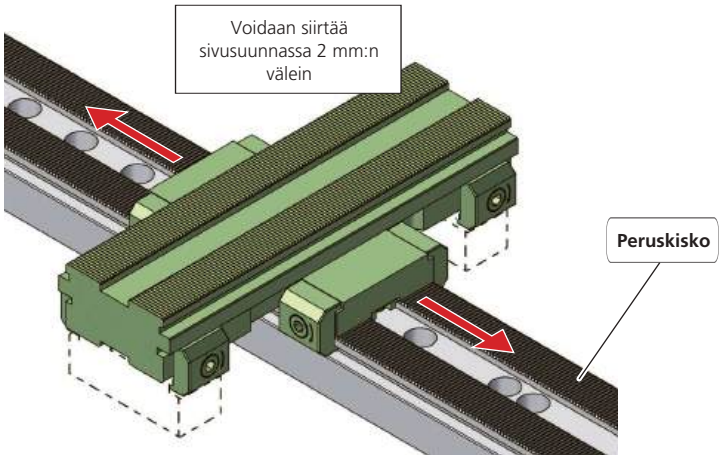
PCB1000SET	
1	2x **PCB4050500KP**
3	1x **PCBP69SET**
4	4x **TWPAS1240**
5	6x **M12X40ISO4762**
6	10x **PCPF16L6**
7	8x **PCPF16L18**
kg	~20,2

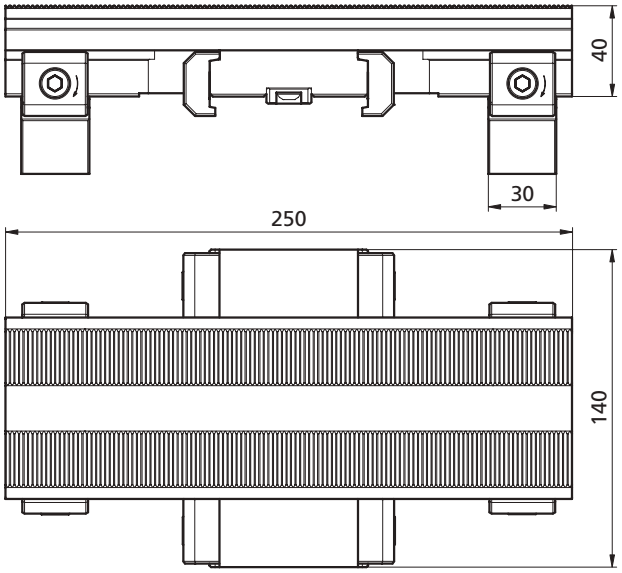


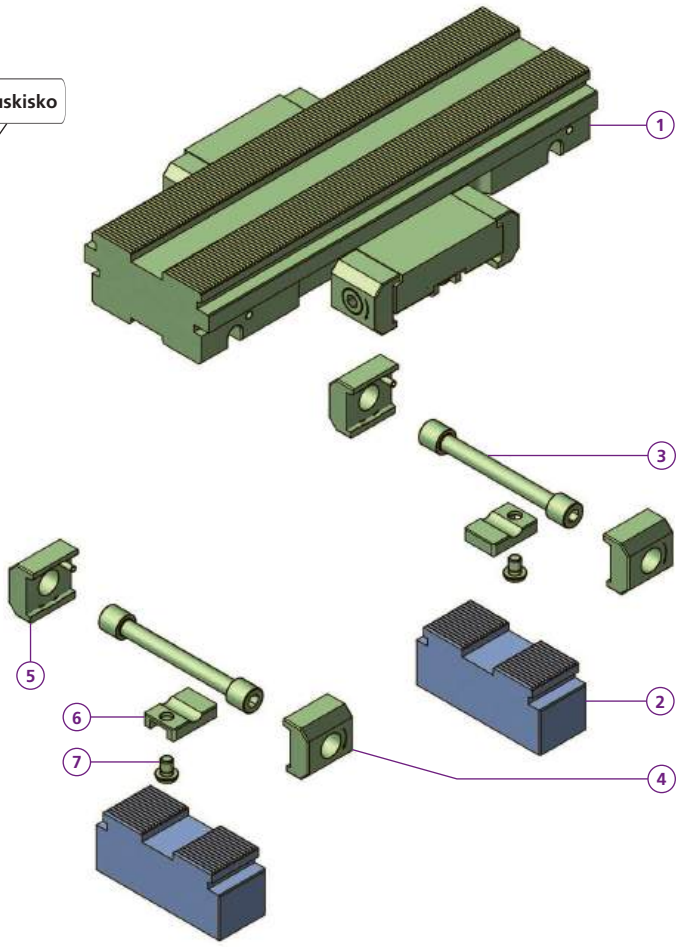
Tilausesimerkki: PCB850SET

Poikkipalkki 90°

PCB250Q90-H35 *power*CLAMP



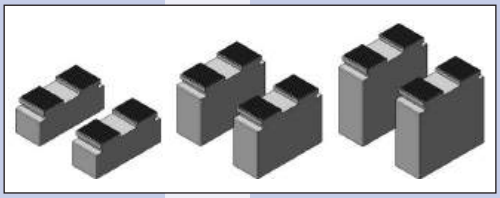




PCB250Q90H35		
1	1x	TH151032
2	2x	———
3	4x	**PCS14**
4	4x	**PCSP30L**
5	4x	**PCSP30R**
6	4x	**PCGU2030**
7	1x	**M6X8ISO7380**
kg		~8,18

Peruskiskon korkeus

AS35	kg	AS60	kg	AS80	kg
(H = 35)	~0,6	(H = 60)	~1,1	(H = 80)	~1,5



Tukielementit

90° poikkikiskoa käytettäessä käytetään kahta **AS35 / AS60 / AS80** tukielementtiä riippuen peruskiskon korkeudesta, johon ne on asennetaan.

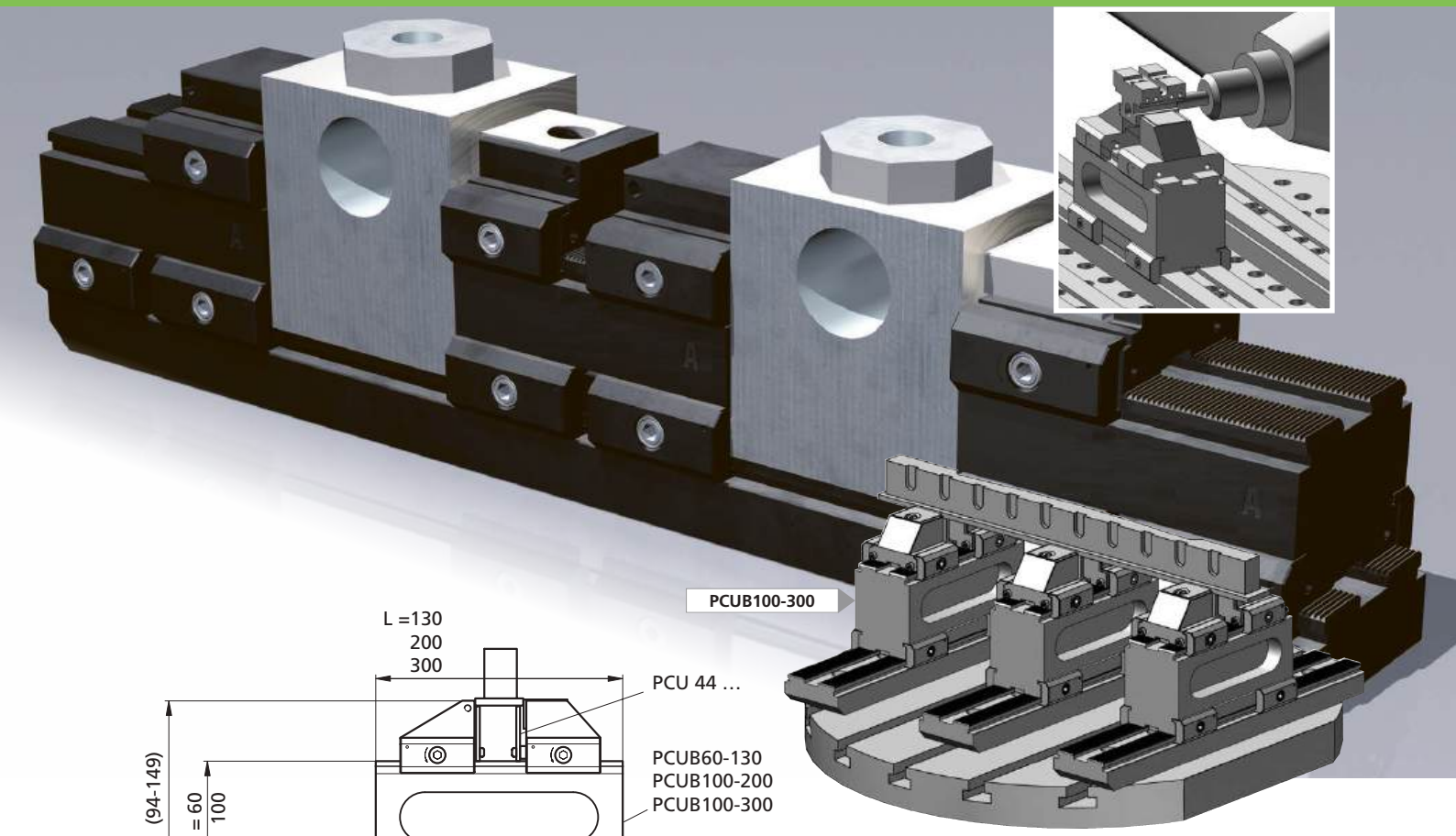
Tilausesimerkki: PCB250Q90H35

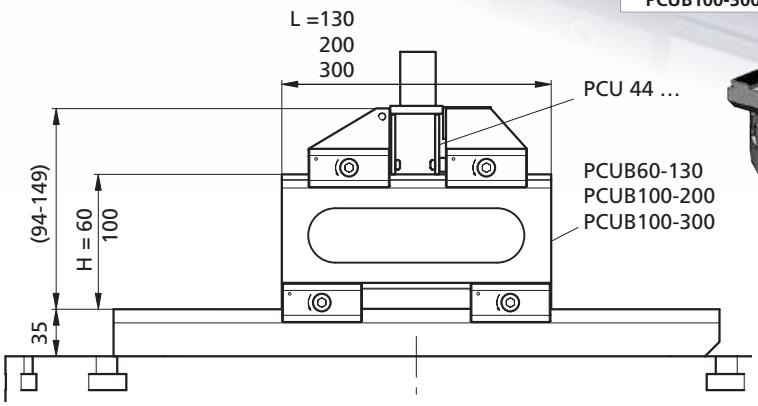
Tilattava erikseen

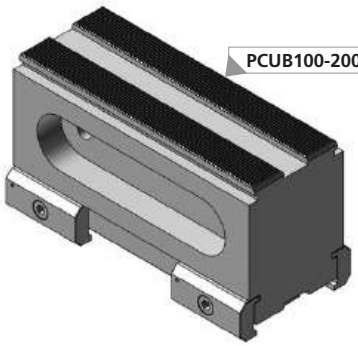
Korotuspalat 5-akseliseen koneistukseen

PCUB60-130
PCUB100-200
PCUB100-300

*power*CLAMP



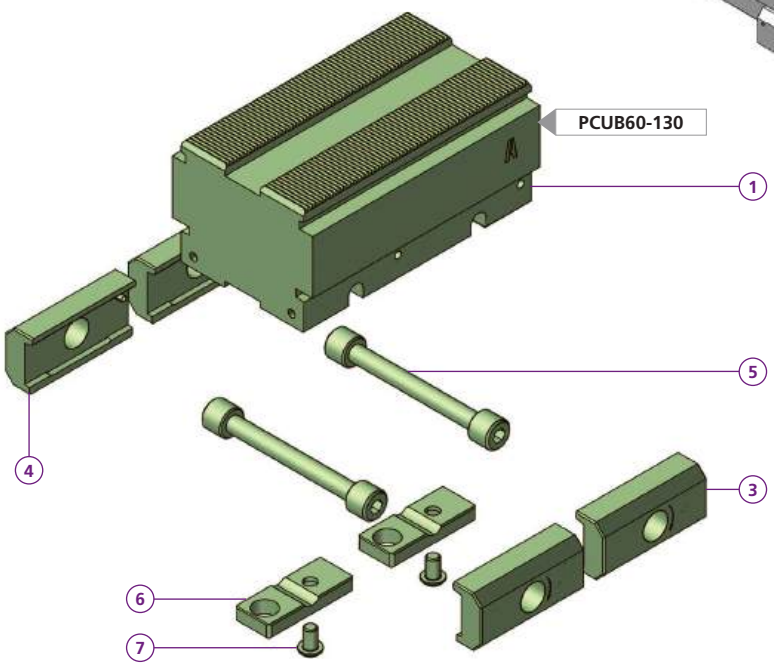




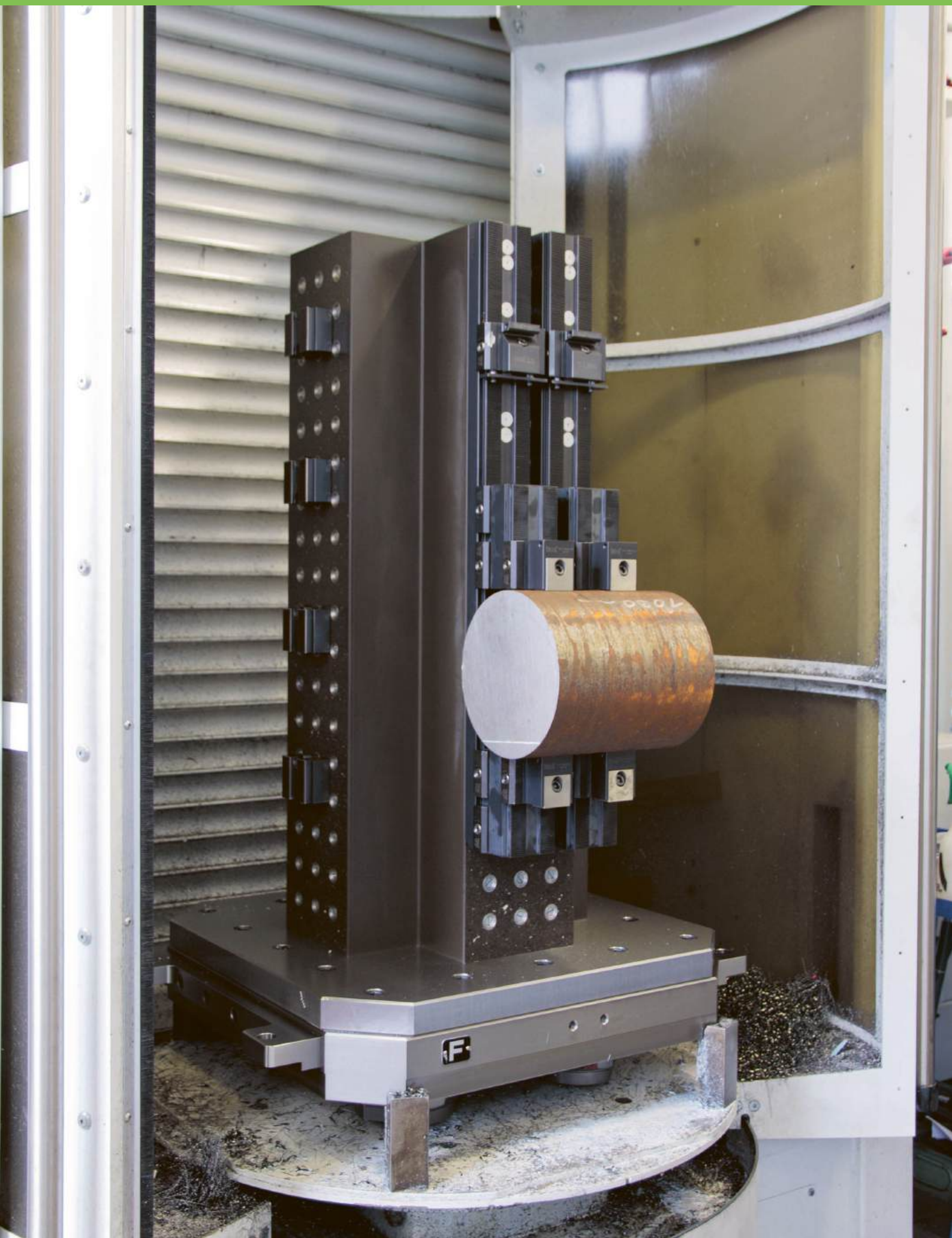
	PCUB60-130	
1	1x	TK120596
3	2x	**PCSP60R**
4	2x	**PCSP60L**
5	2x	**PCS14**
6	2x	**PCGU2049**
7	2x	**M6X8ISO7380**
L	=	130
H	=	60
kg		~5,8

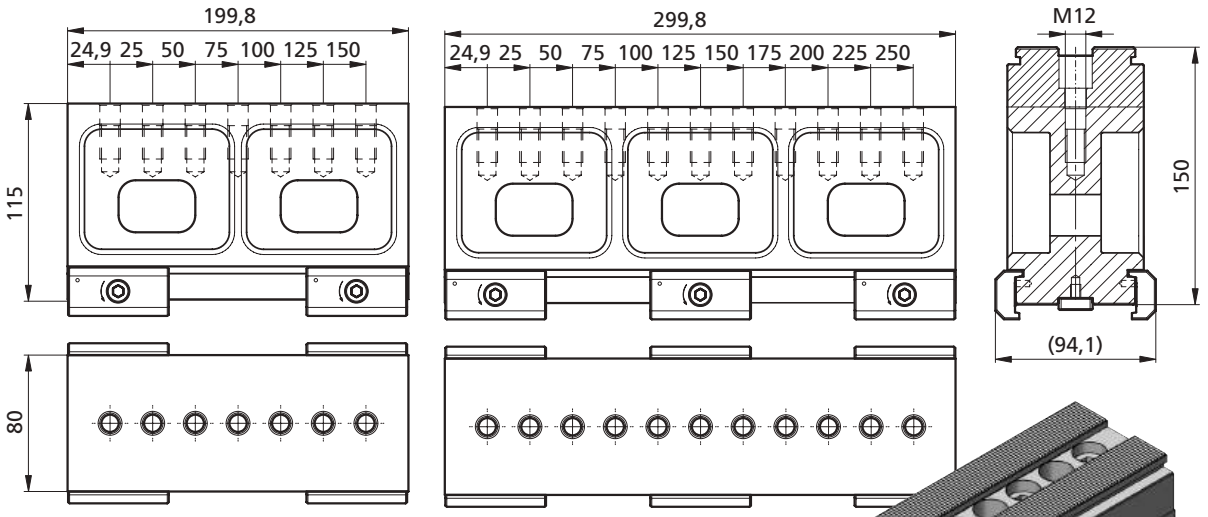
	PCUB100-200	
1	1x	TK130108
L	=	200
H	=	100
kg		~10,5

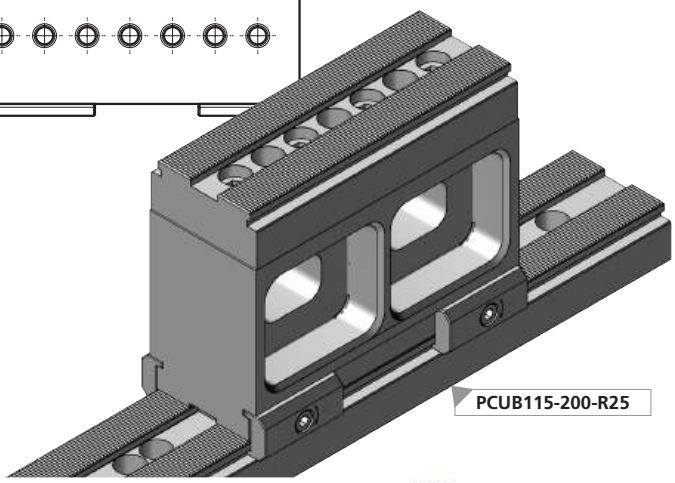
	PCUB100-300	
1	1x	TK130109
3	3x	**PCSP60R**
4	3x	**PCSP60L**
5	3x	**PCS14**
6	3x	**PCGU2049**
7	3x	**M6X8ISO7380**
L	=	300
H	=	100
kg		~16



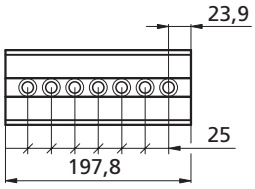
Tilausesimerkki: PCUB100-200

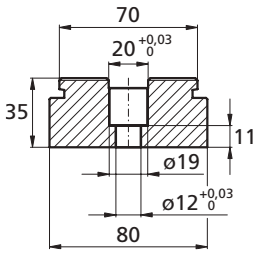




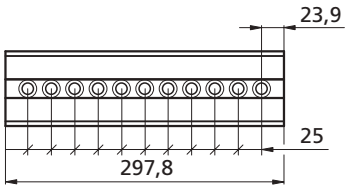


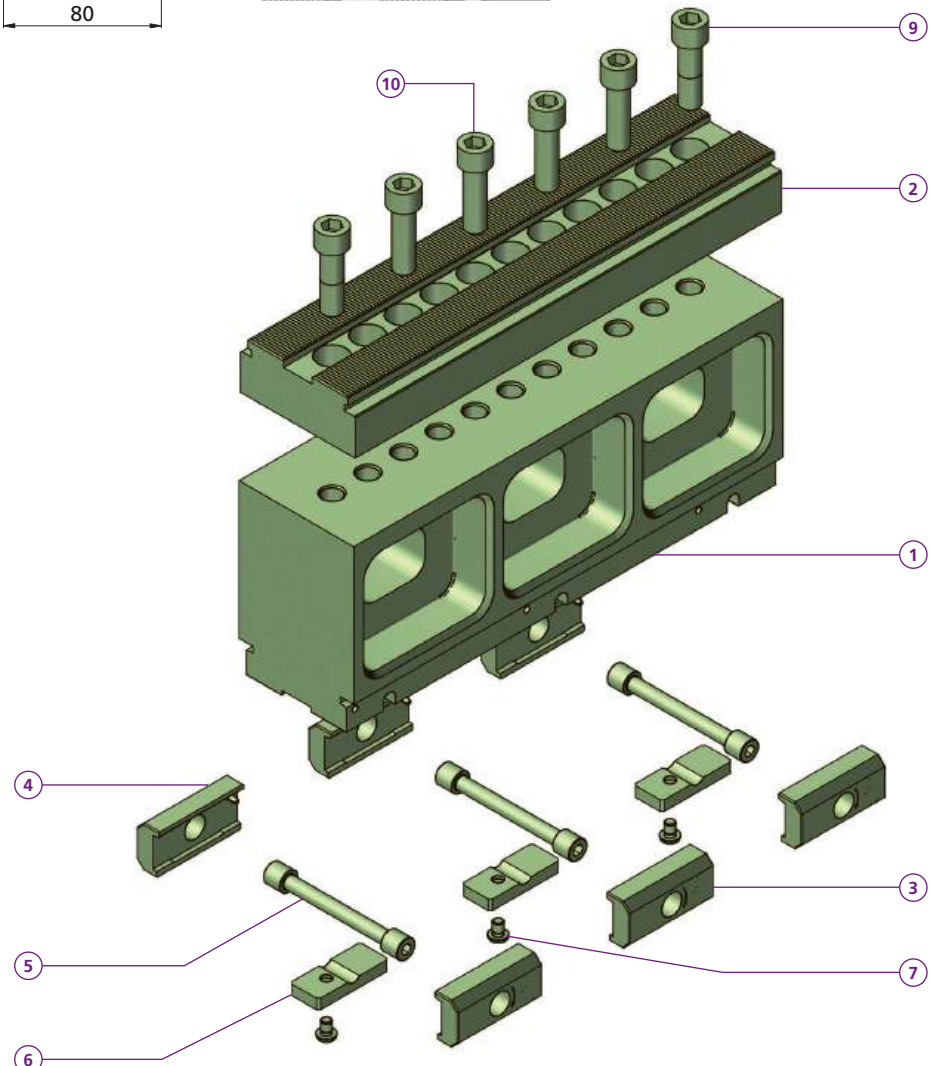
PCB25200	kg	~3,6





PCB25300	kg	~5,4

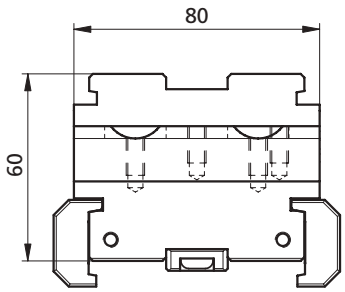


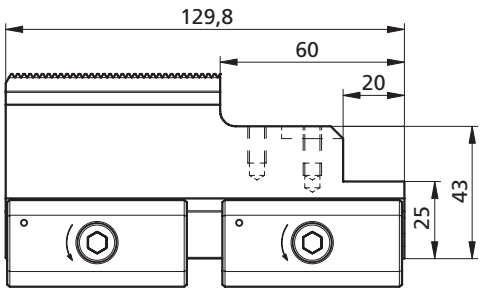


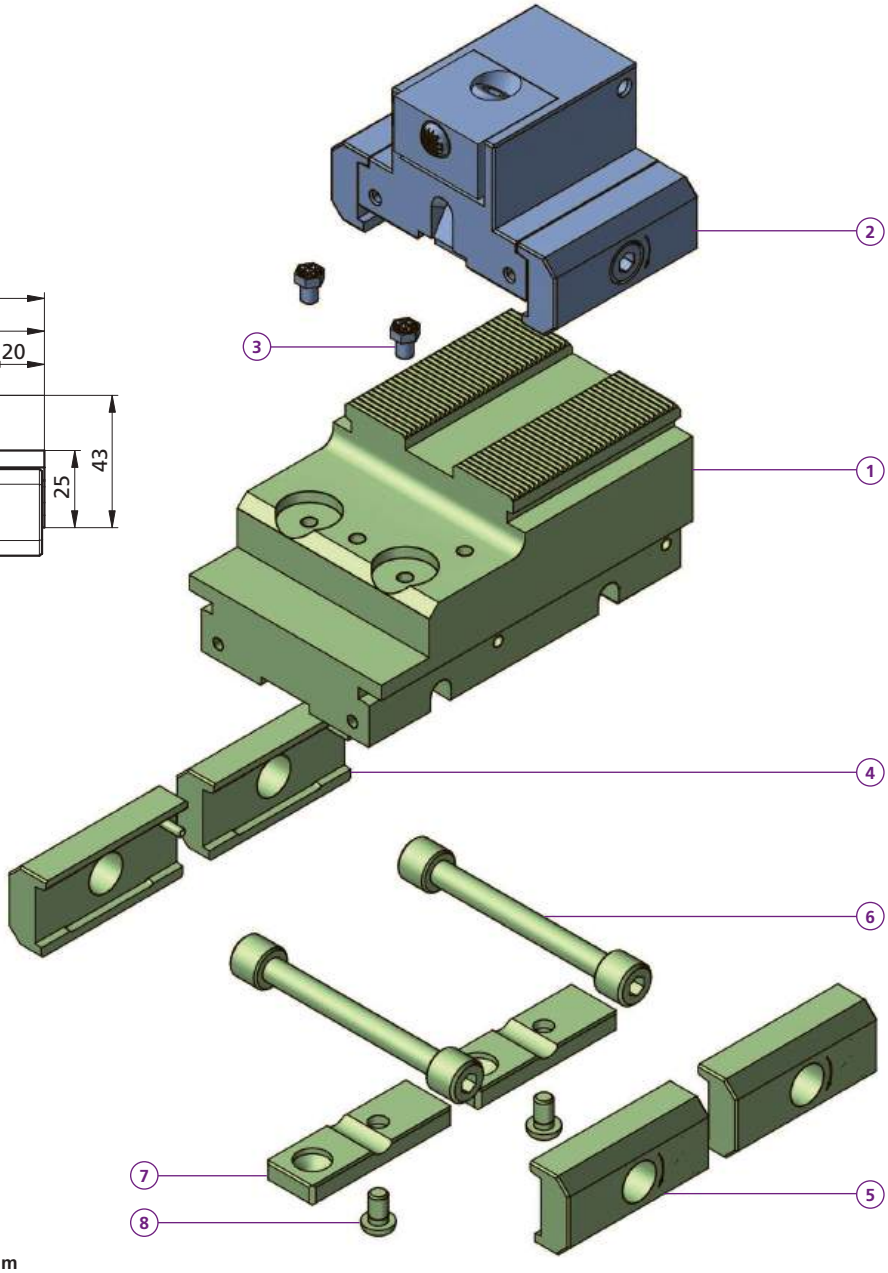
PCUB115-200-R25		
1	1x	TK130323
2	1x	**PCB25200**
3	2x	**PCSP60R**
4	2x	**PCSP60L**
5	2x	**PCS14**
6	2x	**PCGU2049**
7	2x	**M6X8ISO7380**
9	2x	**TWPAS1240**
10	2x	**M12X40ISO4762**
kg		~13

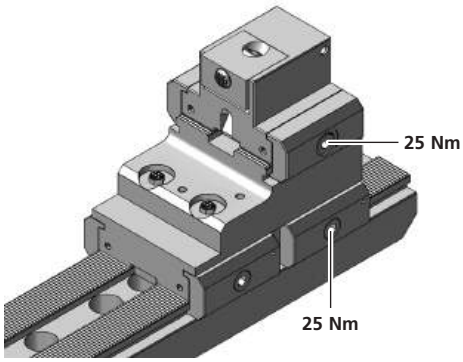
PCUB115-300-R25		
1	1x	TK130324
2	1x	**PCB25300**
3	3x	**PCSP60R**
4	3x	**PCSP60L**
5	3x	**PCS14**
6	3x	**PCGU2049**
7	3x	**M6X8ISO7380**
9	2x	**TWPAS1240**
10	4x	**M12X40ISO4762**
kg		~19,6

Tilausesimerkki: PCUB115-300-R25









PCUB60-70-130		
1	1x	TK130707
2	1x	**PS1F43N49-60**
3	2x	**CCHMR**
4	2x	**PCSP60L**
5	2x	**PCSP60R**
6	2x	**PCS14**
7	2x	**PCGU2049**
8	2x	**M6X8ISO7380**
kg		~4,3

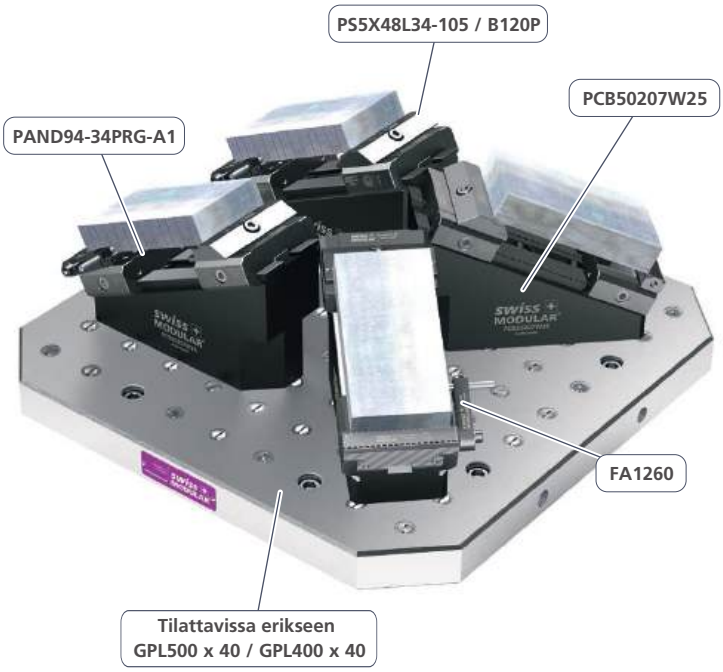
sivu. 64

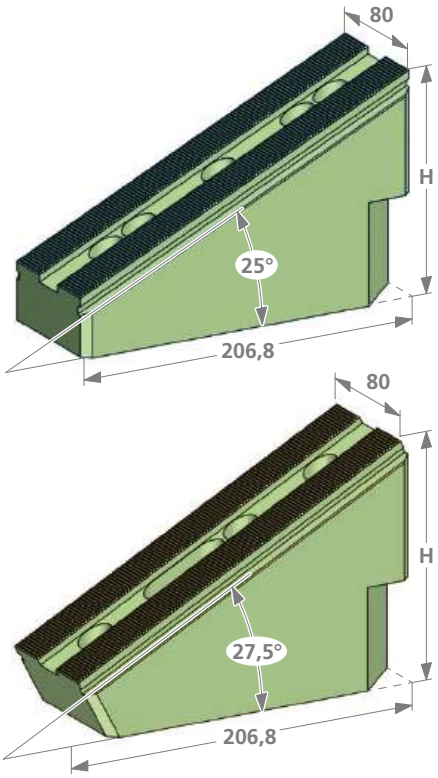
Tarvikkeet sivu. 337

Tilausesimerkki: PCUB60-70-130

Tilattava erikseen

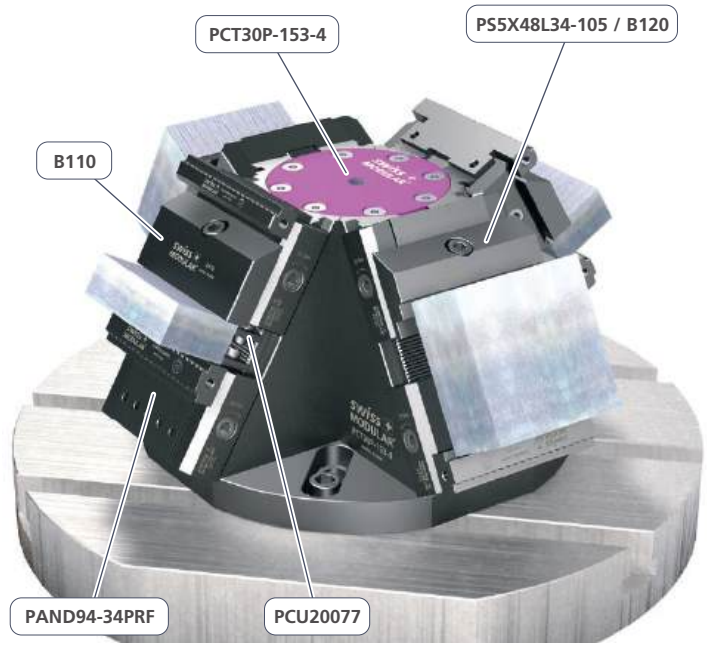
Tilauskoodi	kg	∠	H
PCB50207W25	~9,2	25°	131,5
PCB50207W27	~9,5	27,5°	139,7

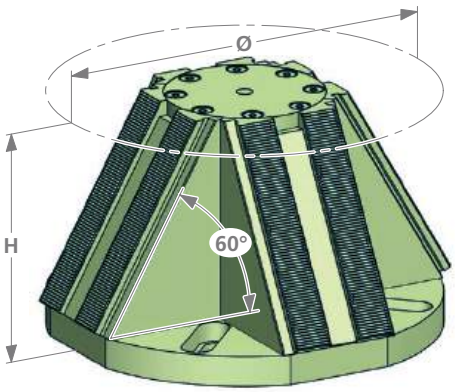




Peruskiskot voidaan asettaa joko yhdensuuntaisesti tai diagonaalisesti matriisilevylle

Tilauskoodi	kg	∠	Ø	H
PCT30P-153-4	~24	60°	266	152,4

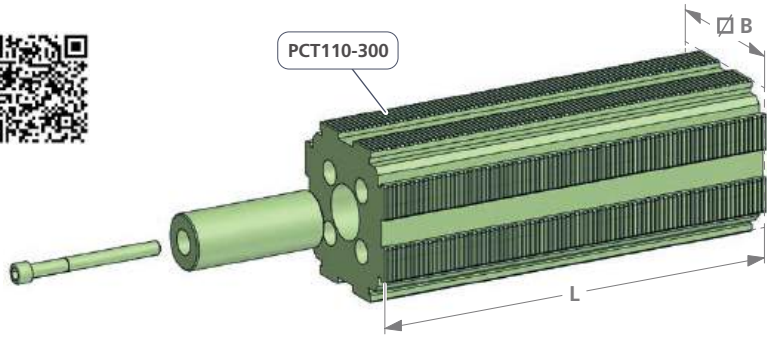


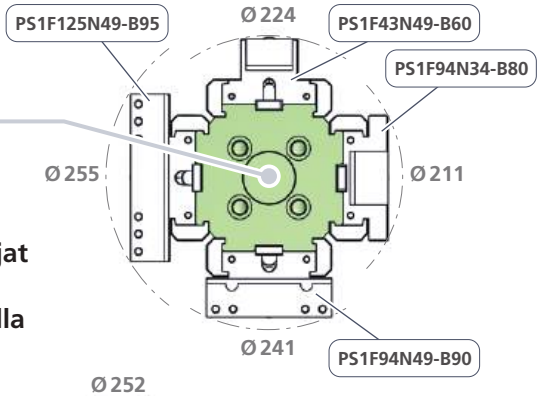


Teräskuorisesta mineraalivalupyramidista löytyy powerCLAMP-kiskon hammastus, joka mahdollistaa kompaktin mutta joustavan 5-akselisen koneistuksen.
Moduulit on asennettu 60° kulmaan.
Mineraalivalun ansiosta rakenne on suhteellisen kevyt mutta erittäin jäykkä, mikä parantaa koneistuksen lopputulosta.

Skannaa tai klikkaa PDF STEP

Tilauskoodi	kg	L	B
PCT110-300	~24,5	300	110x110
PCT110-350	~27,5	350	110x110
PCT110-400	~31,5	400	110x110
PCT110-450	~35,5	450	110x110
PCT110-500	~39,5	500	110x110
PCT110-550	~43,0	550	110x110
PCT110-600	~47,0	600	110x110
PCT110-650	~51,0	650	110x110
PCT110-700	~55,2	700	110x110

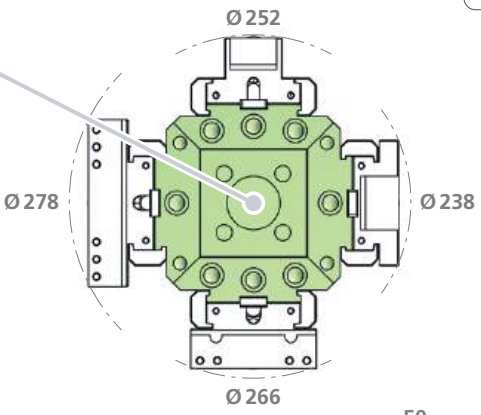




Pyörähdyshalkaisijat erilaisilla kiinnitysmoduuleilla

Teräs-epoxymineraali

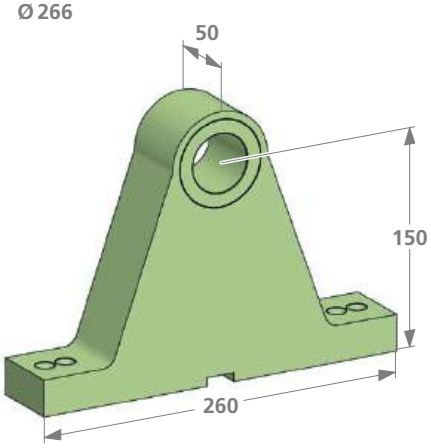
Tilauskoodi	kg	L	B
PCMT150-700	~83,0	700	150x150
PCMT150-750	~89,0	750	150x150
PCMT150-800	~95,0	800	150x150
PCMT150-850	~101,0	850	150x150



Vastalaakeri

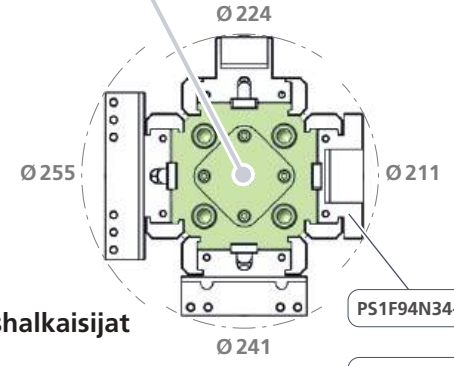
Tilauskoodi	kg
PCGL15050	~8,0

***epoxy*Mineraali vähentää värähtelyitä ja painoa**

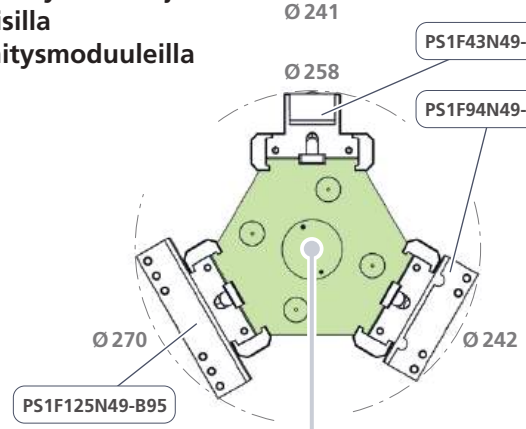


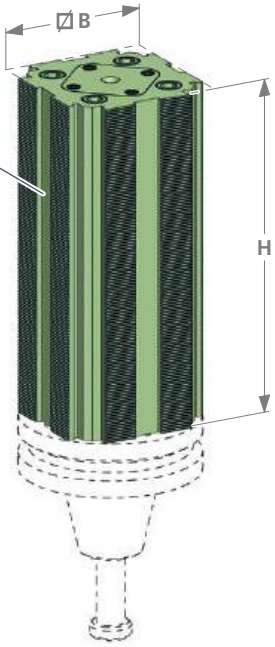
Skannaa tai klikkaa PDF STEP

Tilauskoodi	kg	H	B
PCT110-250MATS	~17	250	110x110
PCT110-300MATS	~21	300	110x110

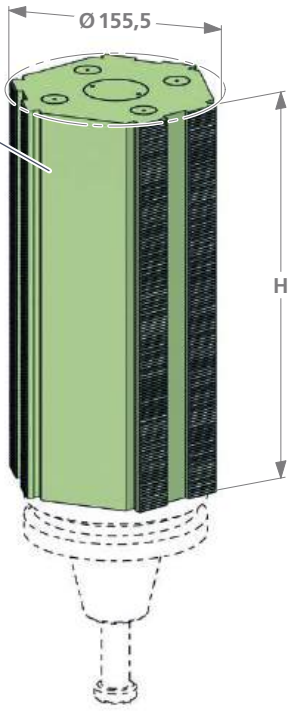


Pyörähdyshalkaisijat erilaisilla kiinnitysmoduuleilla





Tilauskoodi	kg	H
PCT155-290-3MATS	~30	290



Skannaa tai klikkaa PDF STEP

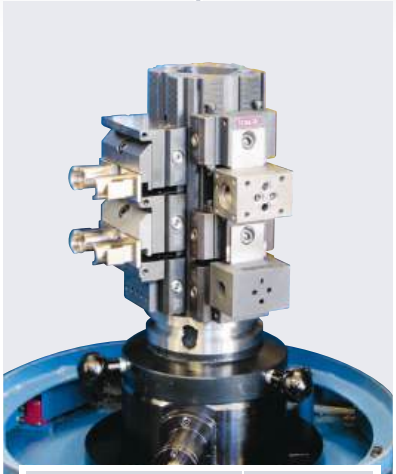
Kiinnitystornit 5-akselisille koneistuskeskuksille

powerCLAMP

powerCLAMP p. 81

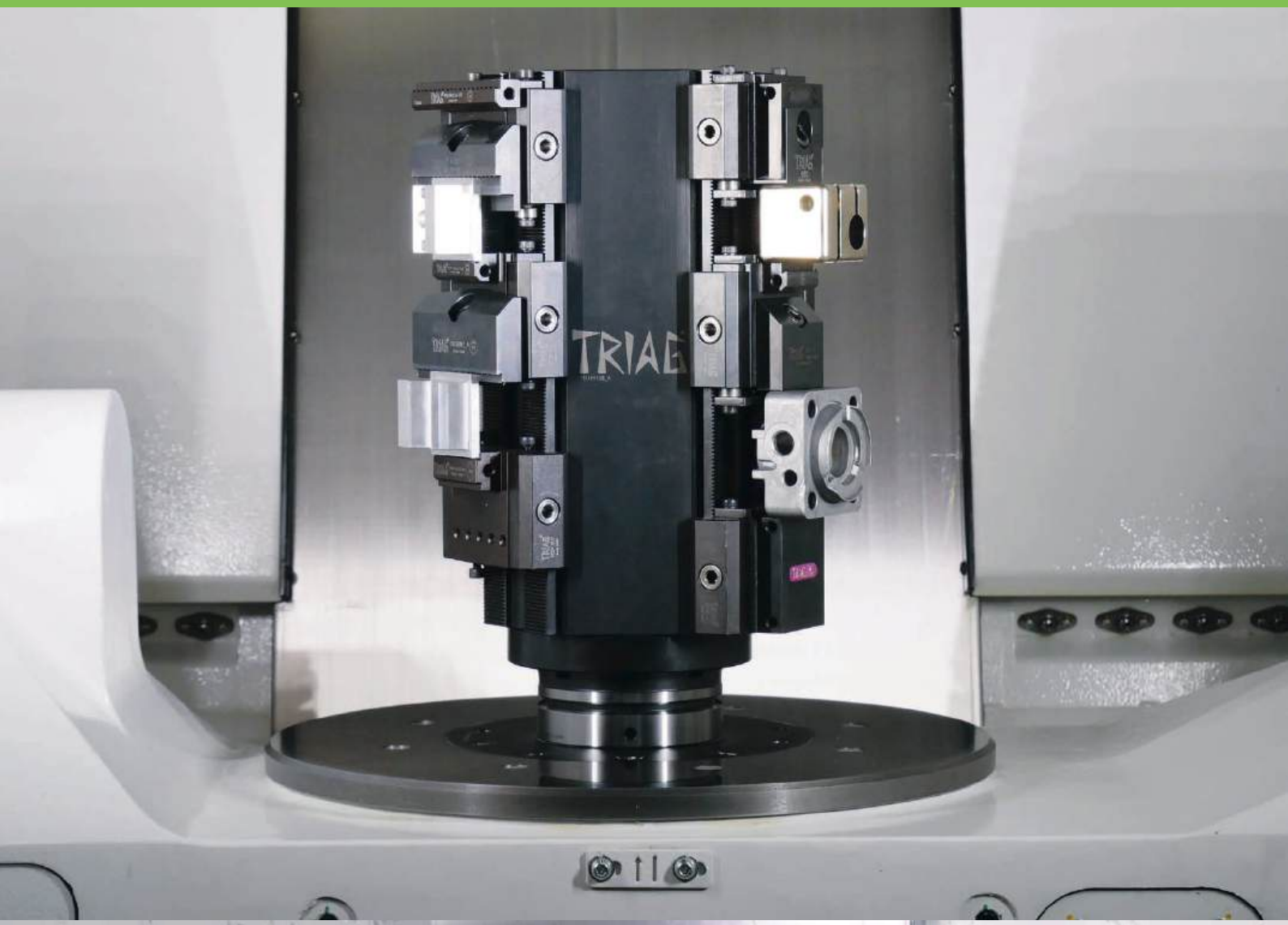
microCLAMP p. 178

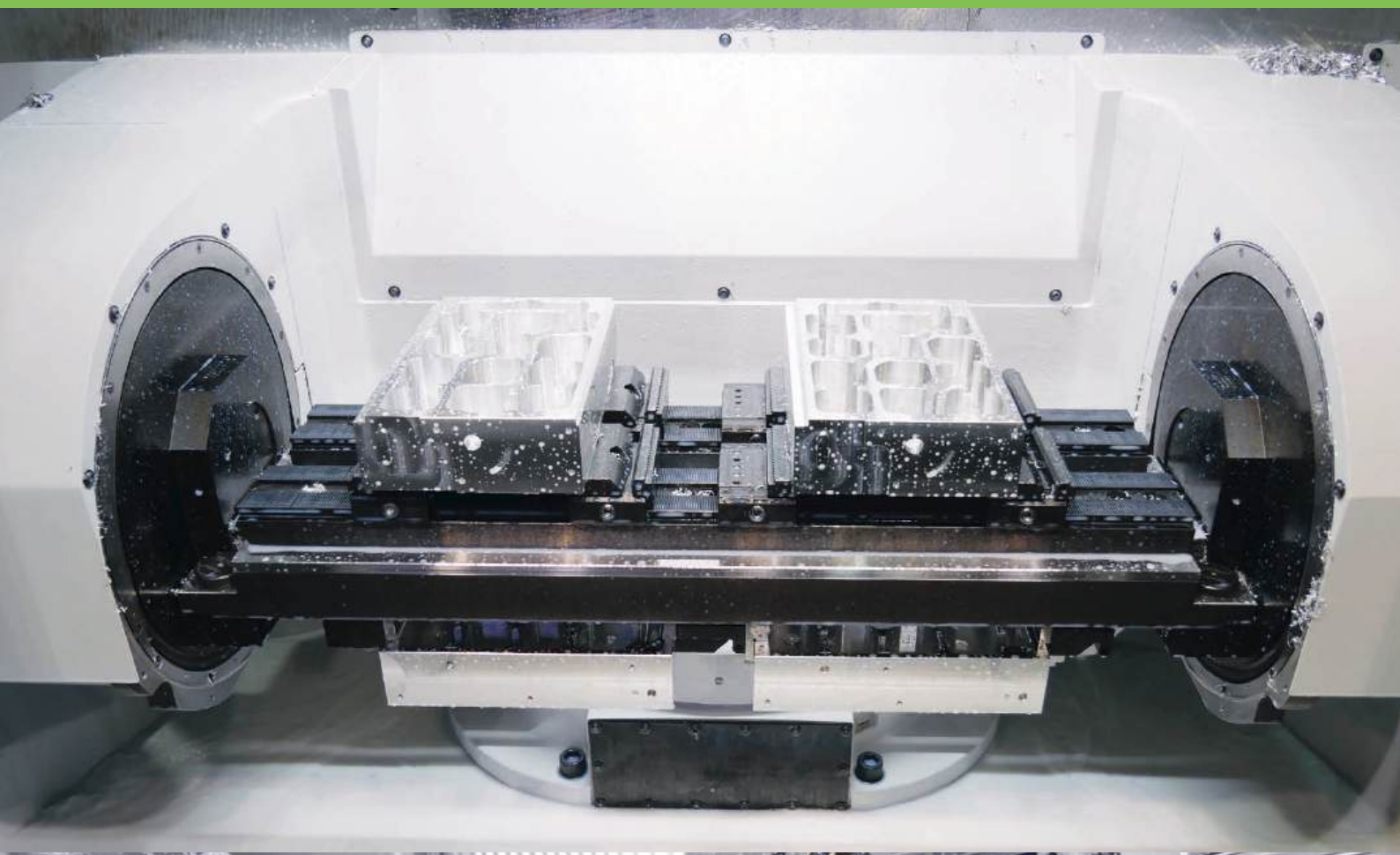
triCENTRO p. 126

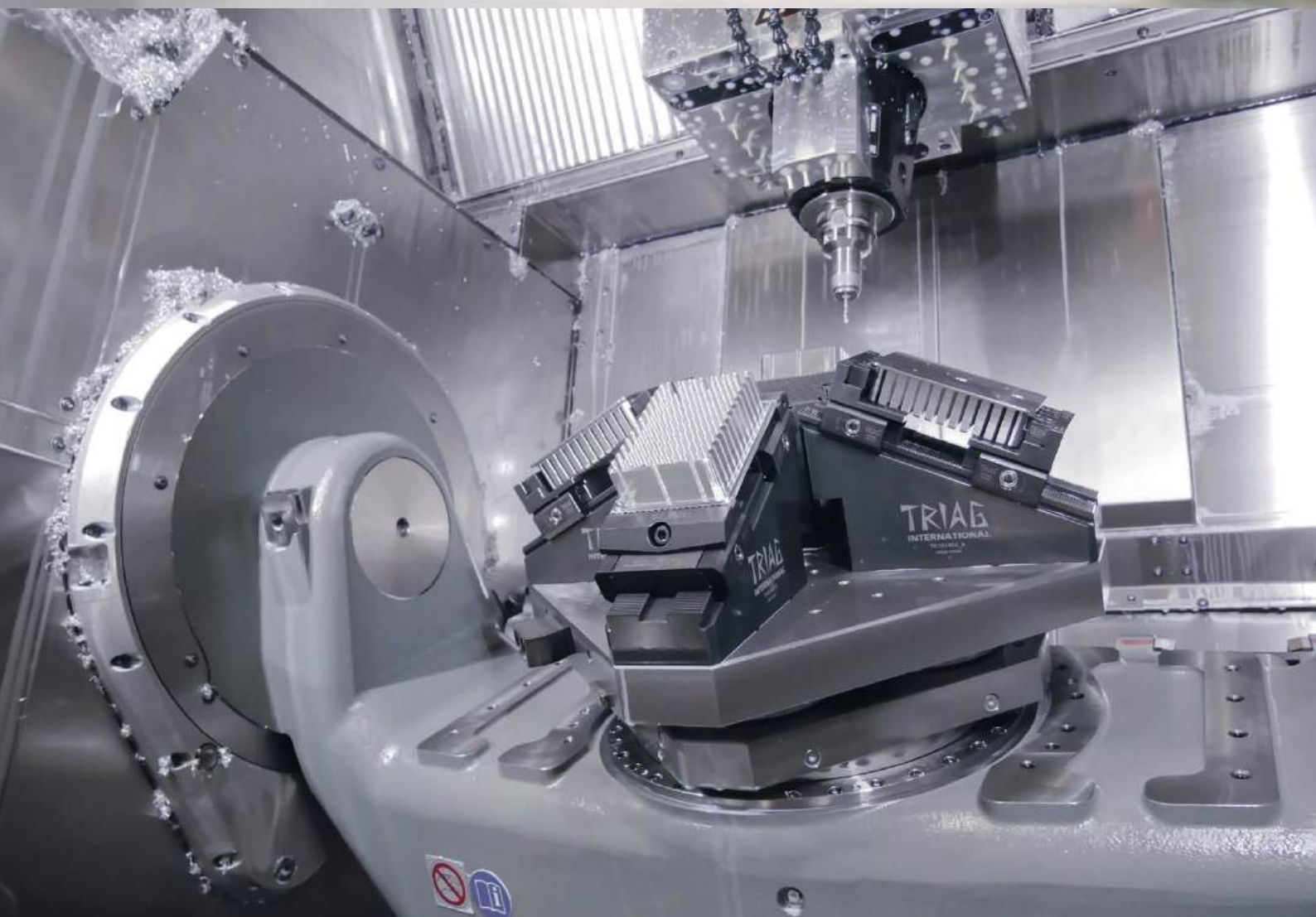


powerCLAMP p. 74, 64

microCLAMP p. 202





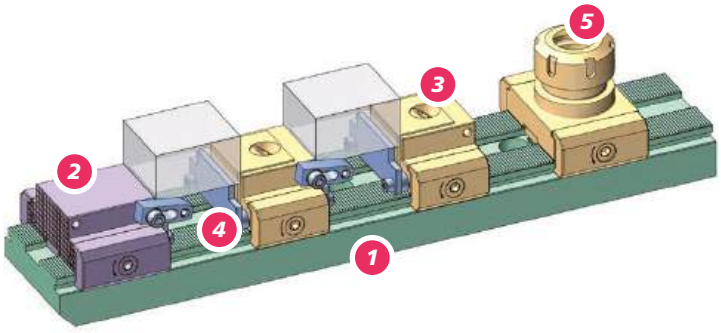

TRIAG
INTERNATIONAL

Tilausesimerkki

1x PCSET18-450A *2x* PCSET18-N3 *1x* PS1X50N62-ER32

1 2 3 4 5

1x 01 *&4* B48-29

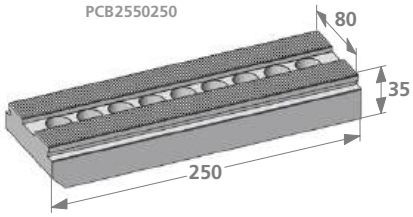


Jokainen peruskisko sisältää yhden valintasi mukaisen päätymoduulin!
Taulukosta 2

1 Peruskiskot

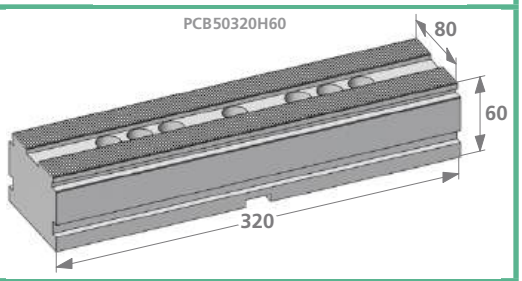
PCSET18-250A	PCB2550250	PCSET18-600A	PCB4050600
PCSET18-350A	PCB4050350	PCSET18-650A	PCB4050650
PCSET18-400A	PCB4050400	PCSET18-700A	PCB4050700
PCSET18-450A	PCB4050450	PCSET18-750A	PCB4050750
PCSET18-500A	PCB4050500	PCSET18-800A	PCB4050800
PCSET18-550A	PCB4050550		

PCB2550250



PCSET18-320B	PCB50320H60
PCSET18-400B	PCB100400H60
PCSET18-500B	PCB100500H60
PCSET18-600B	PCB100600H60
PCSET18-650B	PCB100650H60
PCSET18-690B	PCB100690H60
PCSET18-850B	PCB100850H60

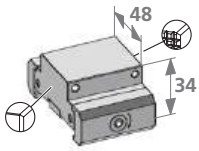
PCB50320H60



2 Päätymoduulit

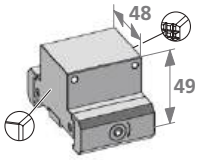
48

PAND 48-34



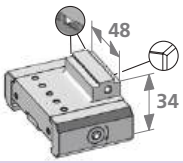
01

PAND 48-49



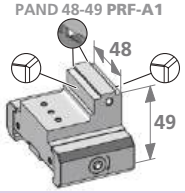
02

PAND 48-34 PRF-A1



03

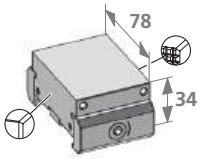
PAND 48-49 PRF-A1



04

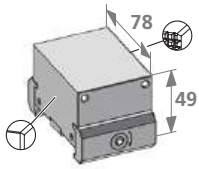
78

PAND 78-34



05

PAND 78-49

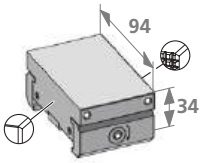


06

F = sileä
R = kaksois-uritettu
= Hammastettu

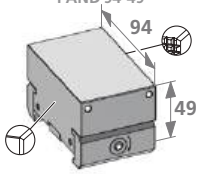
94

PAND 94-34



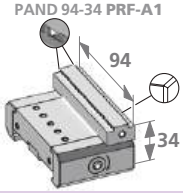
07

PAND 94-49



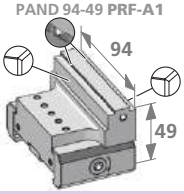
08

PAND 94-34 PRF-A1



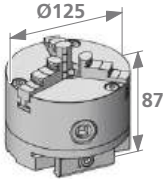
09

PAND 94-49 PRF-A1



10

5 Kolmileukaistukka, Holkki-istukka, Mini itsekeskittävä puristin



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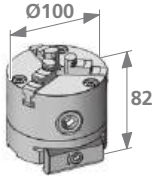

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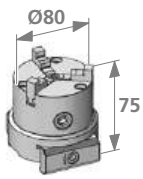

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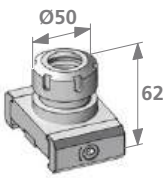
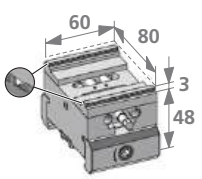


PS1X50N62-ER32



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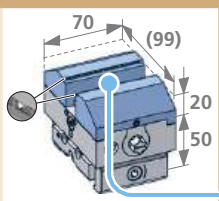


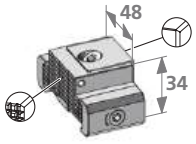
PCZ100L50

Tilattava erikseen *tri*CENTRO 128 - 129

3 Alaspäinpainavat moduulit

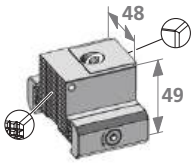
48

PS1 R 48N34 B80N



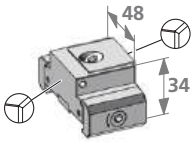
PCSET18-N1

PS1 R 48N49 B80N



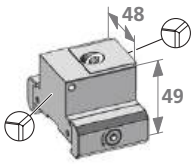
PCSET18-N2

PS1 F 48N34 B80N



PCSET18-N3

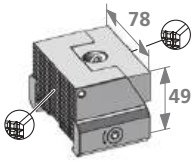
PS1 F 48N49 B80N



PCSET18-N4

78

PS1 R 78N49 B90R78



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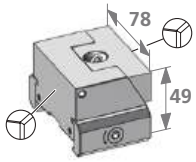
PS1 F 78N49 B90F78

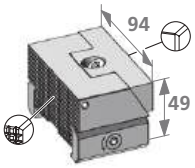


PCSET18-N6

F = sileä
R = kaksois-uritettu
= Hammastettu

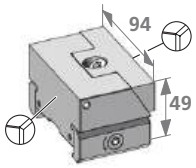
94

PS1 R 94N49 B90



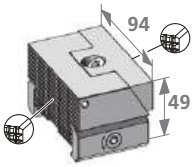
PCSET18-N7

PS1 F 94N49 B90



PCSET18-N8

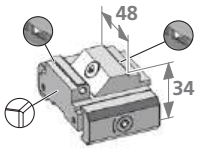
PS1 R 94N49 B93



PCSET18-N9

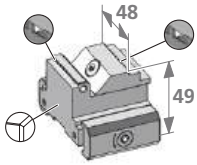
Lineaarisesti liikkuvat moduulit

PS1 PF 48L34 B115P



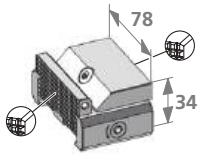
PCSET18-L1

PS1 PF 48L49 B115P



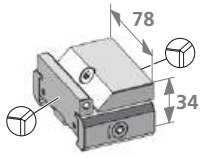
PCSET18-L2

PS1 R 78L34 B141



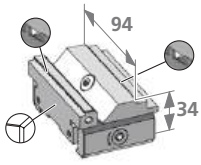
PCSET18-L5

PS1 F 78L34 B140



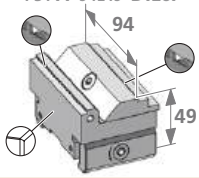
PCSET18-L6

PS1 PF 94L34 B120P



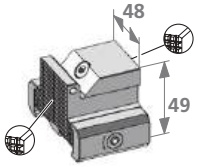
PCSET18-L9

PS1 PF 94L49 B120P



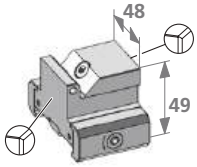
PCSET18-L11

PS1 R 48L49 B106



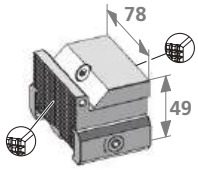
PCSET18-L3

PS1 F 48L49 B105



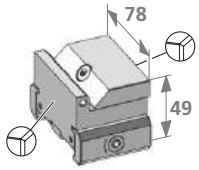
PCSET18-L4

PS1 R 78L49 B141



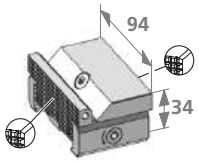
PCSET18-L7

PS1 F 78L49 B140



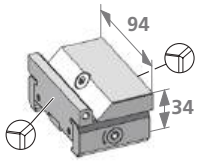
PCSET18-L8

PS1 R 94L34 B111



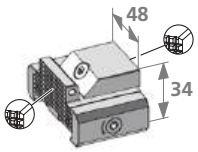
PCSET18-L12

PS1 F 94L34 B110



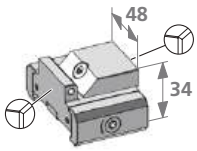
PCSET18-L13

PS1 R 48L34 B106



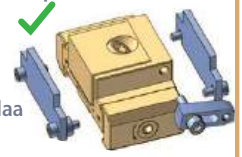
PCSET18-L16

PS1 F 48L34 B105

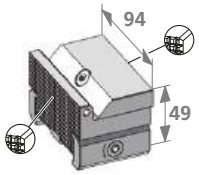


PCSET18-L17

Jokainen valitsemasi alaspäin vetävä- tai lineaarisesti liikkuva kiinnityselementti sisältää 2 valintasi mukaista suuntaispalaa sekä 1 "stopparin"

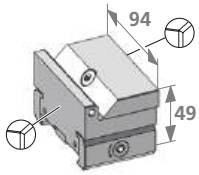


PS1 R 94L49 B111



PCSET18-L14

PS1 F 94L49 B110

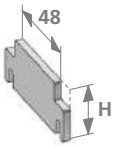


PCSET18-L15

4 Suuntaispalat

48

PCU29047



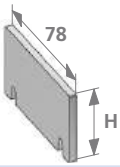
H

PCU 20 047
PCU 24 047
PCU29047
PCU 31 047
PCU 34 047
PCU 39 047
PCU 44 047
PCU 46 047

B48- ...

78

PCU39077



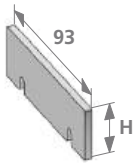
H

PCU 20 077
PCU 24 077
PCU 29 077
PCU 31 077
PCU 34 077
PCU39077
PCU 44 077

B78- ...

94

PCU29093



H

PCU 14 093
PCU 20 093
PCU 24 093
PCU29093
PCU 31 093
PCU 34 093
PCU 39 093
PCU 44 093
PCU 46 093
PCU 47 093

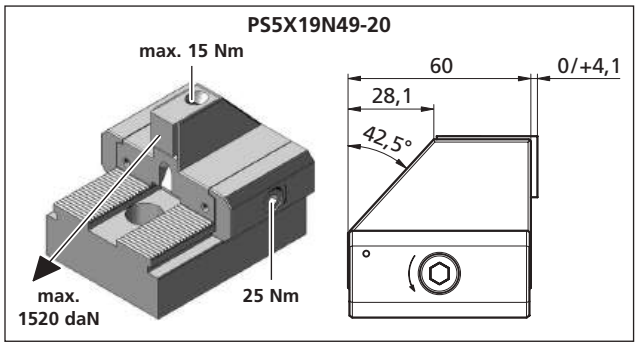
B94- ...

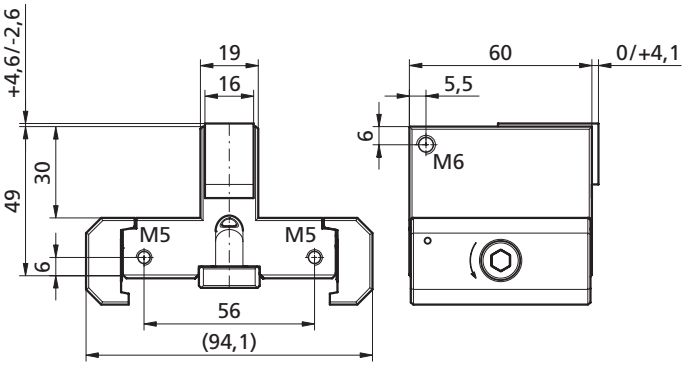
Jyrsintä "stoppari"

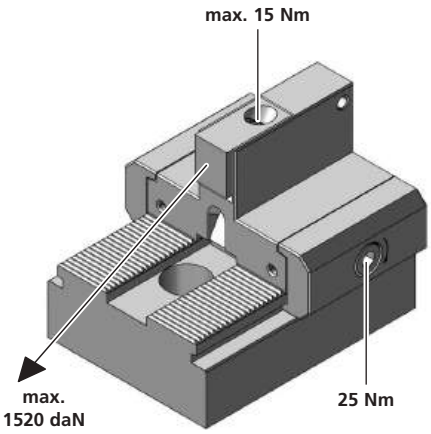
FA1240

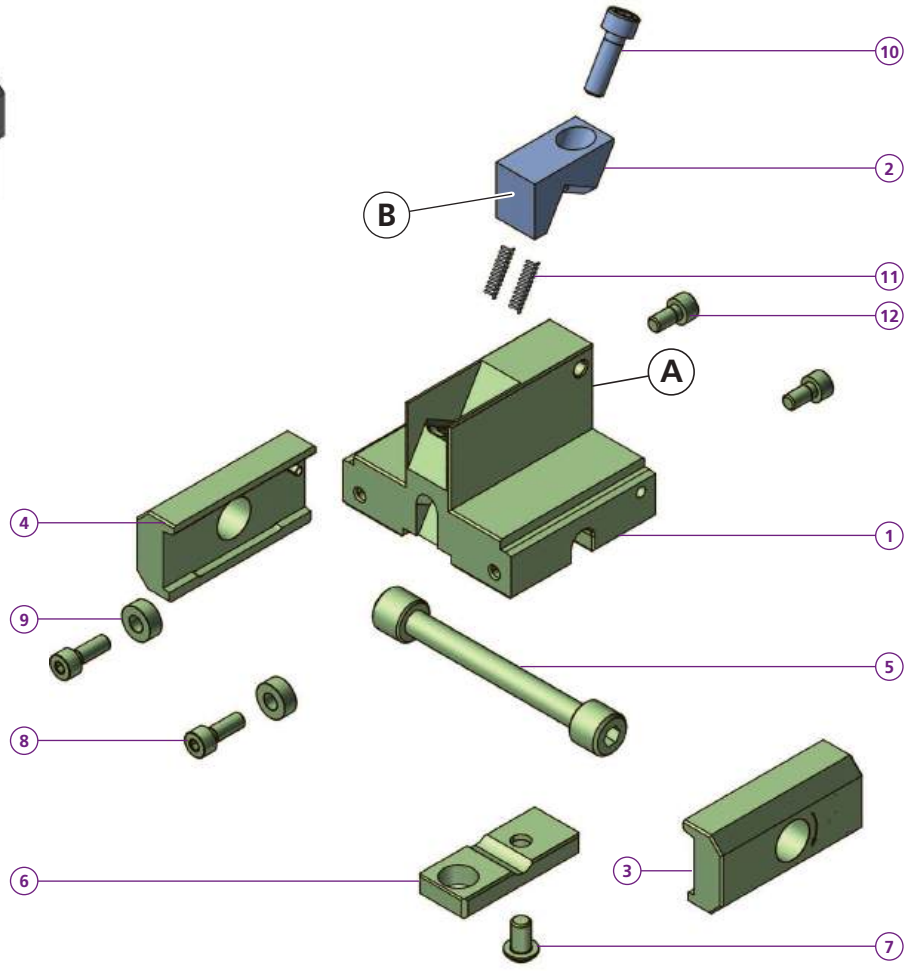
1 x sisältyy settiin

Lisätietoja (Mitoitus, materiaalit, puristusvoimat ja kiristysmomentit) 60 - 112 sivu









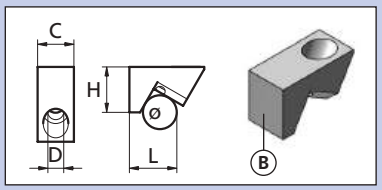
A

42,5°	**PS5X19N49-20**	
1	1x	TF140449
9	2x	**PCD005**
8	2x	**M5X14ISO4762**
kg		~1,1
	PS1F19N49-20	
1	1x	TF150961
	PS1R19N49-20	
1	1x	TF140448
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M6X20ISO4762**
11	2x	**FED0418**
12	2x	**M5X10ISO4762**
kg		~1,2

B

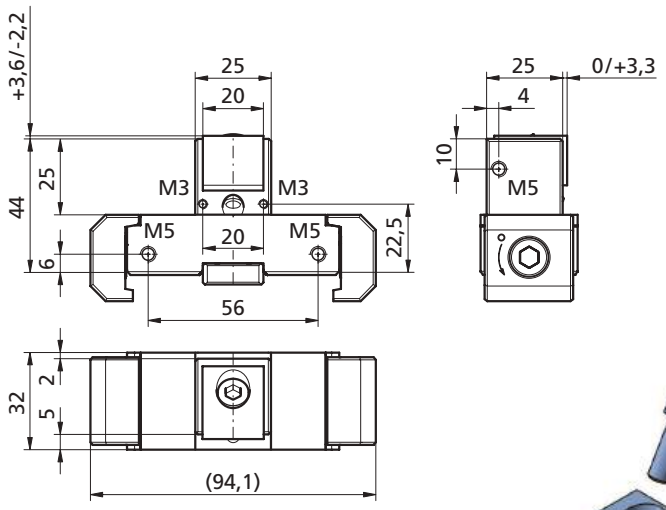
	B20	B21	B22
C	16	16	16
H	20	20	20
L	19	19	19
D	6,5	6,5	6,5
ø	12	12	12
i	HV700 x0,2mm	HV700 x0,2mm	*
kg	~0,06	~0,06	~0,06

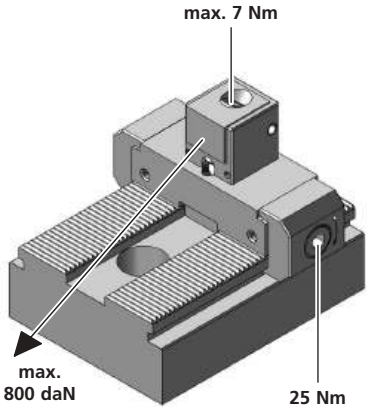
Tilausesimerkki: 1x PS1R19N49-20 & 1x B21

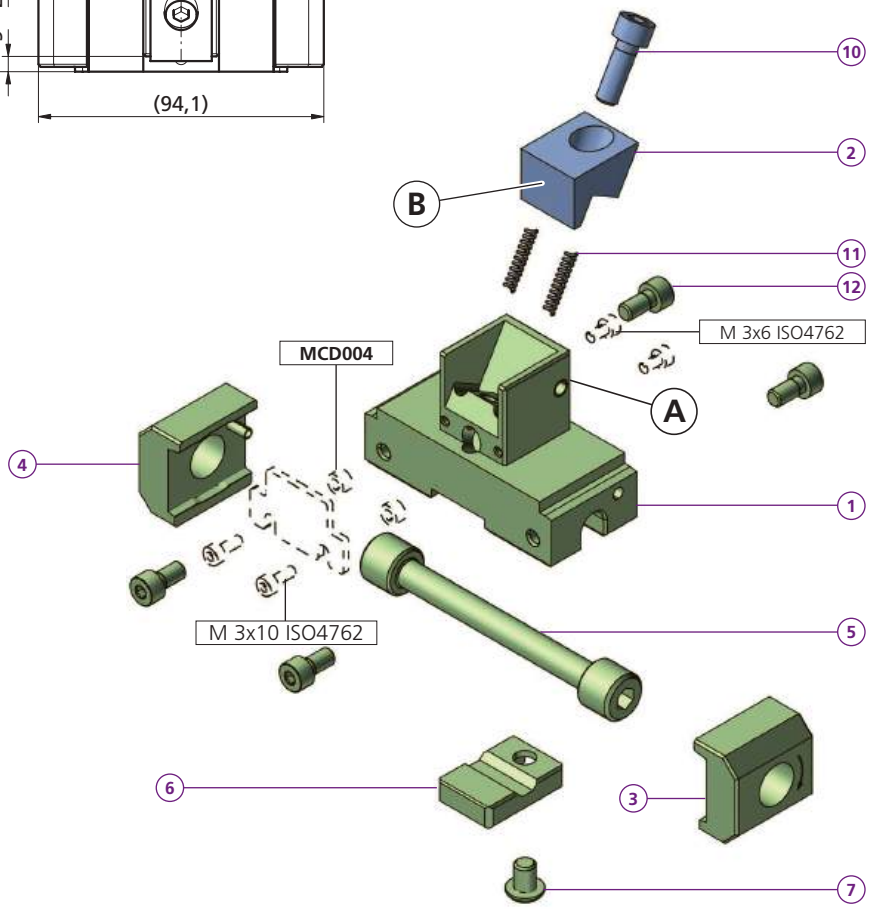


* = Pehmeä teräsleuka

Tilattava erikseen







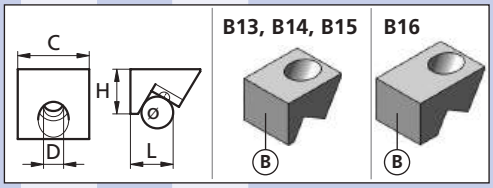
A

	PS1F25N44-13	
1	1x	TF150960
	PS1R25N44-13	
1	1x	TF140450
2	1x	
3	1x	**PCSP30R**
4	1x	**PCSP30L**
5	1x	**PCS14**
6	1x	**PCGU2030**
7	1x	**M6X8ISO7380**
10	1x	**M6X16ISO4762**
11	2x	**FED03018**
12	4x	**M5X10ISO4762**
kg		~0,6

B

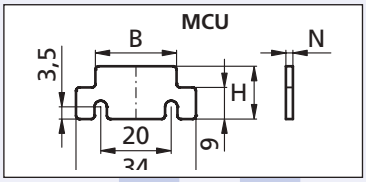
Tilausesimerkki: 1x PS1R25N44-13 & 1x B14

	B13	B14	B15	B16
C	20	20	20	20
H	16	16	16	16
L	13,8	13,8	13,8	19
D	6,5	6,5	6,5	6,5
ø	10	10	10	10
i	HV700 x0,2mm	HV700 x0,2mm	*	*
kg	~0,05	~0,05	~0,05	~0,06



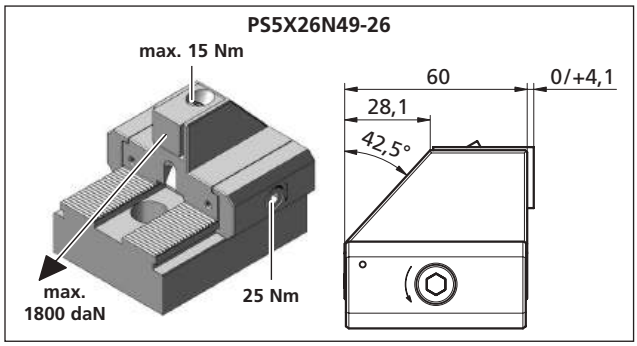
	H	B	N	kg
MCU11037	11	23	2	~0,004
MCU15037	15	23	2	~0,006
MCU18037	18	23	2	~0,008
MCU20037	20	23	2	~0,008
MCU22537	22,5	23	2	~0,008

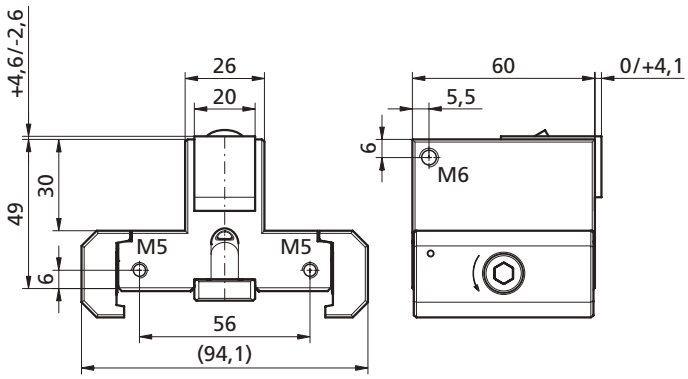
2x **M3X10ISO4762**
2x **M3X6ISO4762**
2x **MCD004**

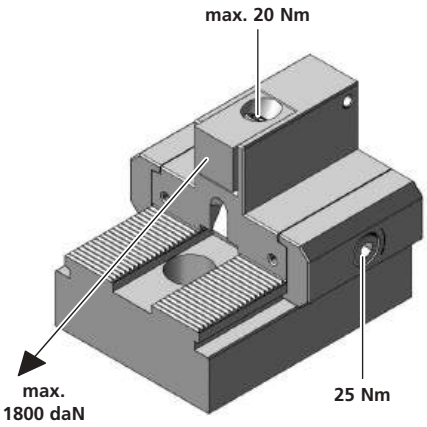


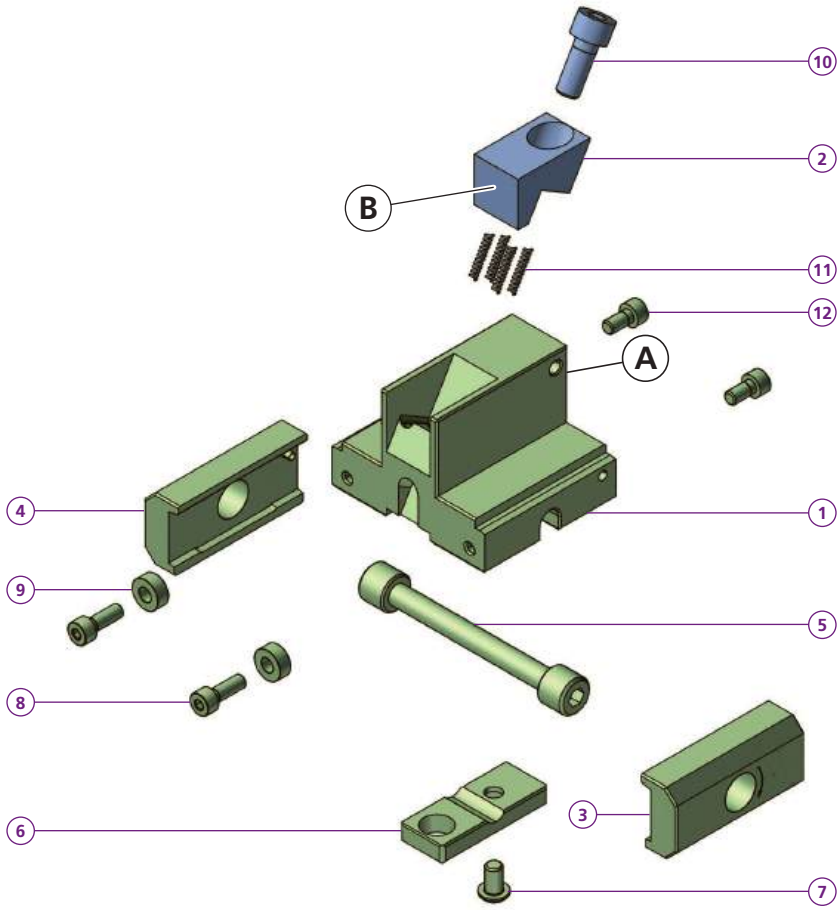
* = pehmeä teräsleuka

Tilattava erikseen









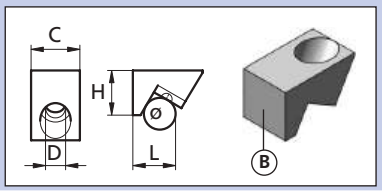
A

42,5°	**PS5X26N49-26**	
1	1x	TF140453
9	2x	**PCD005**
8	2x	**M5X14ISO4762**
kg		~1,1
	PS1F26N49-26	
1	1x	TF140451
	PS1R26N49-26	
1	1x	TF140452
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M8X20ISO4762**
11	4x	**FED0418**
12	2x	**M5X10ISO4762**
kg		~1,2

B

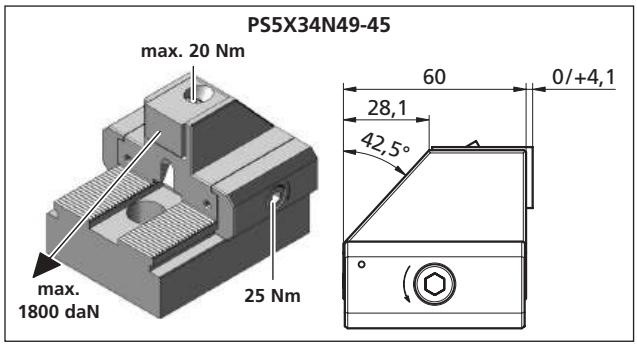
	B26	**B27**	**B28**
C	20	20	20
H	20	20	20
L	19	19	19
D	9	9	9
ø	12	12	12
i	HV700 x0,2mm	HV700 x0,2mm	*
kg	~0,07	~0,07	~0,07

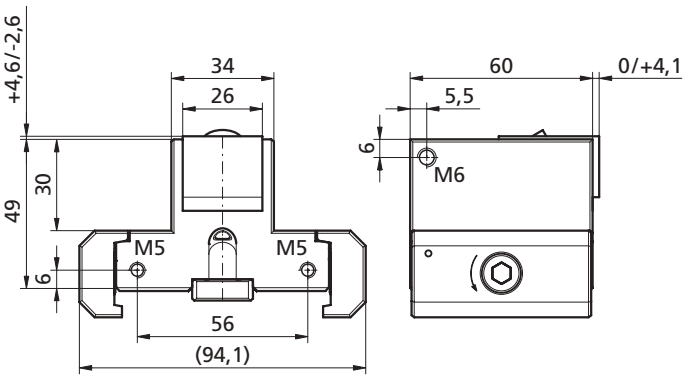
Tilausesimerkki: 1x **PS1R26N49-26** & 1x **B26**

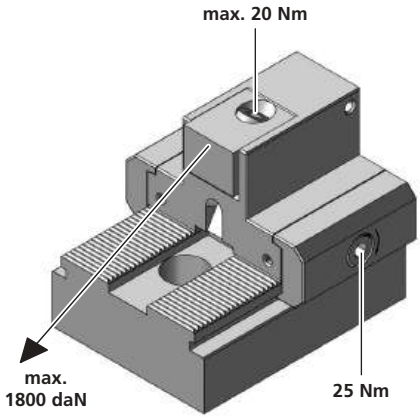


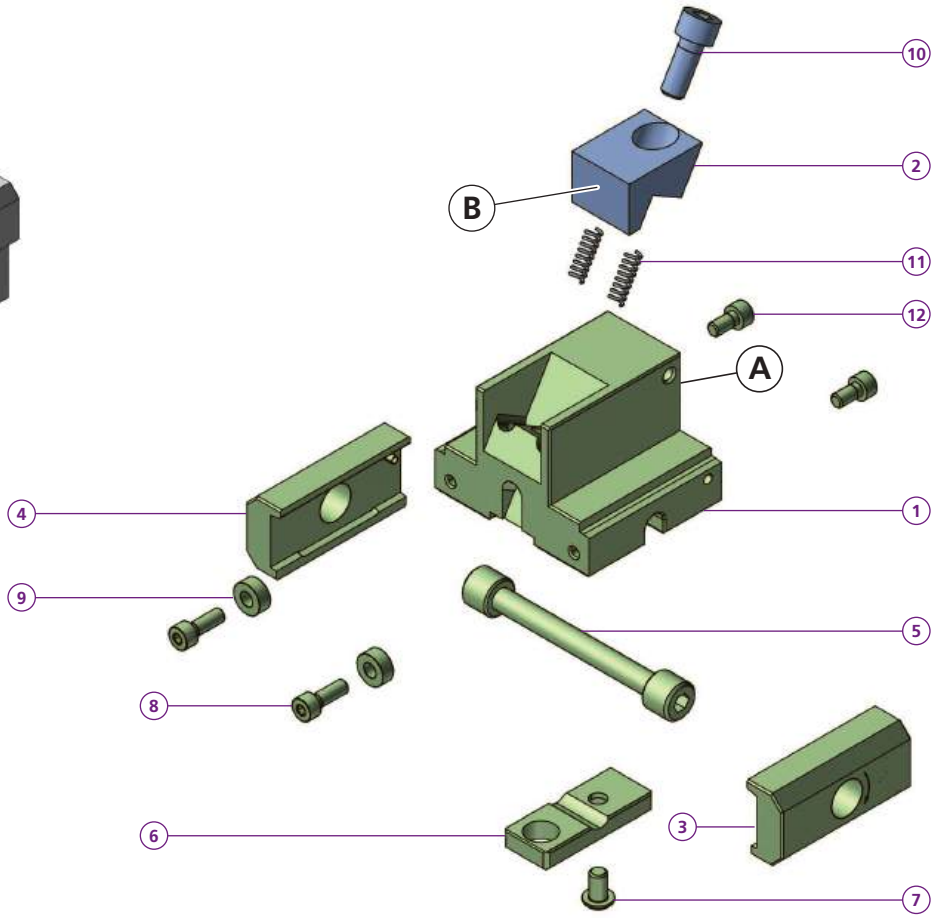
* = pehmeä teräsleuka

Tilattava erikseen









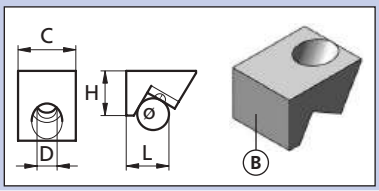
A

42,5°	**PS5X34N49-45**	
1	1x	TF140455
9	2x	**PCD005**
8	2x	**M5X14ISO4762**
kg		~1,2
	PS1F34N49-45	
1	1x	TF191071
	PS1R34N49-45	
1	1x	TF140454
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M8X20ISO4762**
11	2x	**FED0618**
12	2x	**M5X10ISO4762**
kg		~1,3

B

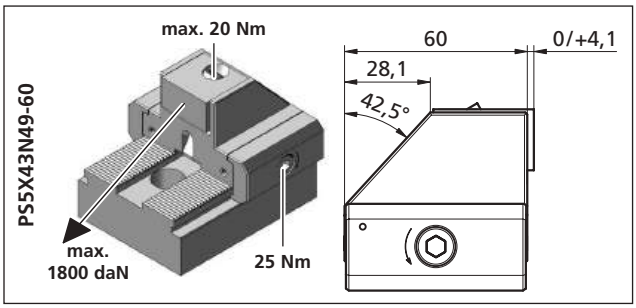
Tilausesimerkki: 1x **PS5X34N49-45** & 1x **B47HM**

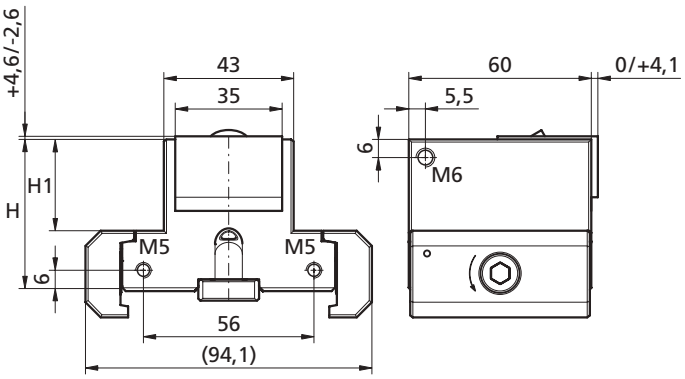
	B45	**B46**	**B47**	**B47HM**
C	26	26	26	26
H	20	20	20	20
L	19	19	19,1	19,1
D	9	9	9	9
ø	12	12	12	12
i	HV700 x0,2mm	HV700 x0,2mm	*	HM
kg	~0,1	~0,1	~0,1	~0,1



Tilattava erikseen

* = pehmeä teräsleuka HM = Kovametallipinnoitettu





A

42,5°

PS5X43N49-60

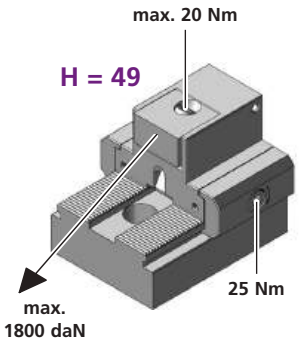
1	1x	TF140458
9	2x	**PCD005**
8	2x	**M5X14ISO4762**
kg		~1,3

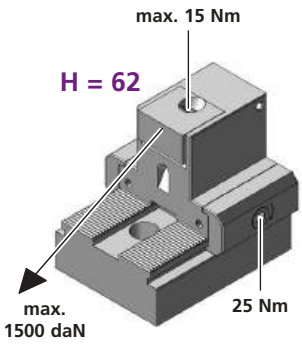
PS1F43N49-60

1	1x	TF140456

PS1R43N49-60

1	1x	TF140457
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M8X20ISO4762**
11	2x	**FED0618**
12	2x	**M5X10ISO4762**
H	=	49
H1	=	30
kg		~1,4



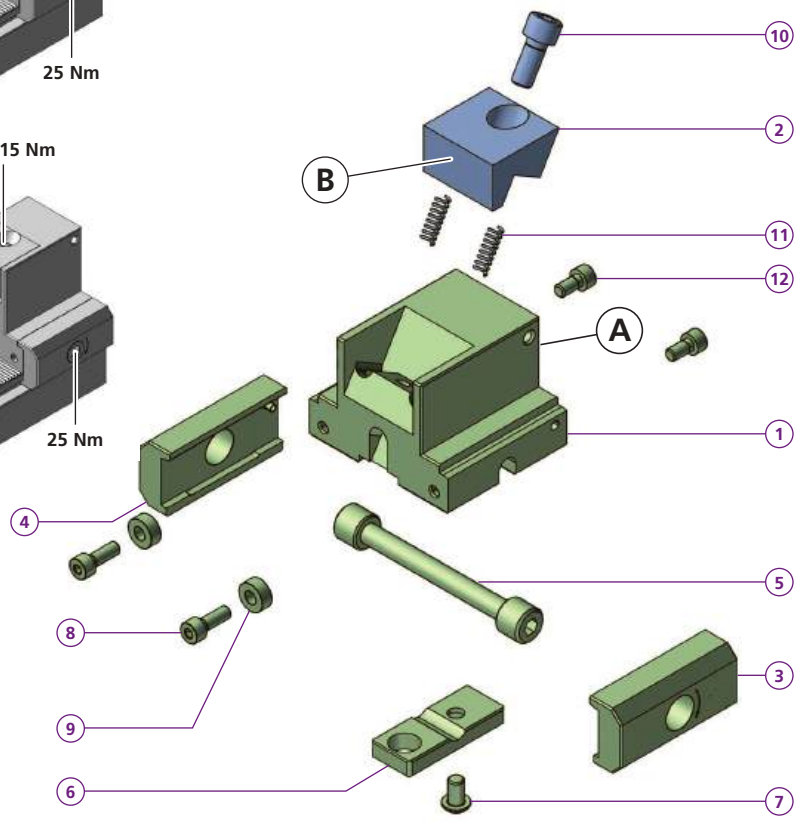


PS1F43N62-60

1	1x	TF140459

PS1R43N62-60

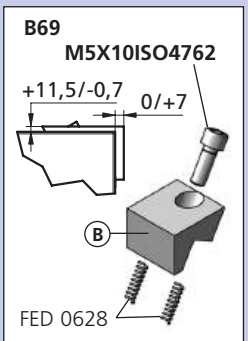
1	1x	TF140460
H	=	62
H1	=	43
kg		~1,7

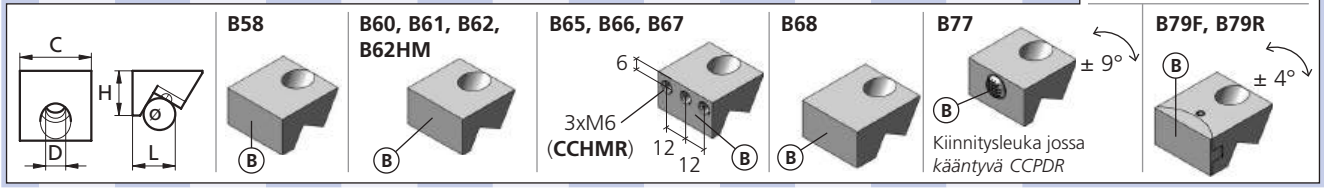


B

Tilausesimerkki: 1x **PS1R43N49-60** & 1x **B61**

	B58	B60	B61	B62	B62HM	B65	B66	B67	B68	B69	B77	B79F	B79R
C	35	35	35	35	35	35	35	35	35	35	35	35	35
H	20	20	20	20	20	20	20	20	20	25	20	20	20
L	26	19	19	19	19	19	19	24	26	22	22	25	25
D	9	9	9	9	9	9	9	9	9	9	9	9	9
ø	12	12	12	12	12	12	12	12	12	12	12	12	12
i	ALU	56HRC	56HRC	*	HM	HV700 x0,2mm	HV700 x0,2mm	HV700 x0,2mm	*	*	56HRC	HV700 x0,2mm	HV700 x0,2mm
kg	~0,07	~0,12	~0,12	~0,12	~0,12	~0,12	~0,12	~0,14	~0,15	~0,15	~0,12	~0,18	~0,18

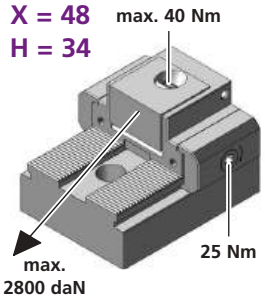


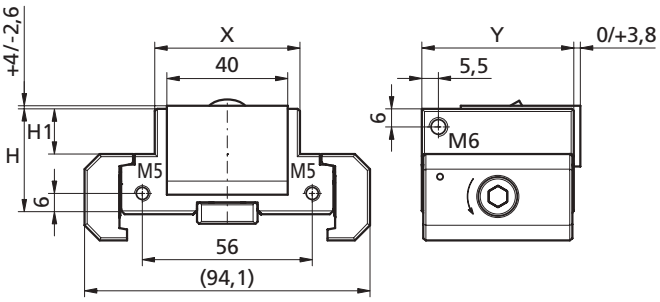


* = pehmeä terässleuka HM = Kovametallipinnoitettu ALU = ENAW-7022

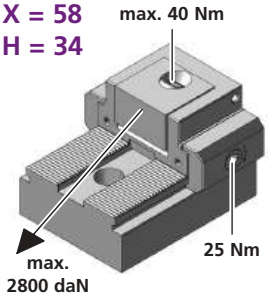
Tilattava erikseen

X = 48
H = 34

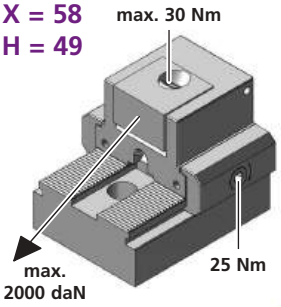




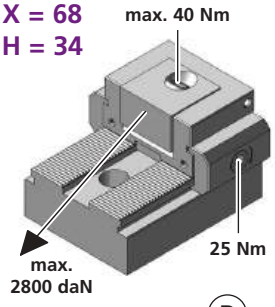
X = 58
H = 34

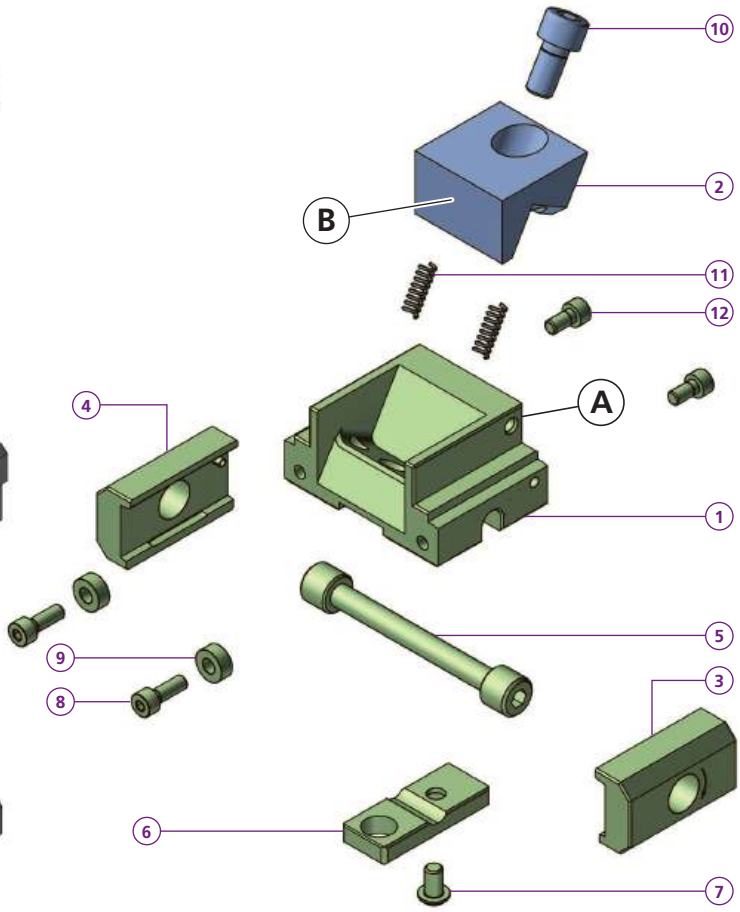


X = 58
H = 49



X = 68
H = 34





A

PS1F48N34-80
1 1x TF140461

PS1R48N34-80
1 1x TF140462
2 1x
3 1x **PCSP50R**
4 1x **PCSP50L**
5 1x **PCS14**
6 1x **PCGU2049**
7 1x **M6X8ISO7380**
8 2x **M5X14ISO4762**
9 2x **PCD005**
10 1x **M10X25ISO4762**
11 2x **FED0618**
12 2x **M5X10ISO4762**
X = 48
H = 34
H1 = 15
Y = 50
kg ~0,9

PS1F58N34-80
1 1x TF140463

PS1R58N34-80
1 1x TF140464
X = 58
H = 34
H1 = 15
Y = 50
kg ~0,9

PS1R58N49-80
1 1x TK120129
3 1x **PCSP60R**
4 1x **PCSP60L**
X = 58
H = 49
H1 = 30
Y = 60
kg ~1,6

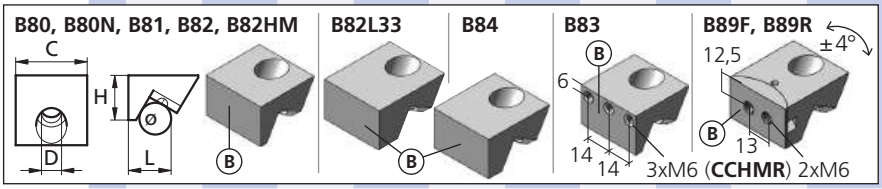
PS1F68N34-80
1 1x TF140465

PS1R68N34-80
1 1x TF140466
X = 68
H = 34
H1 = 15
Y = 50
kg ~1,0

B

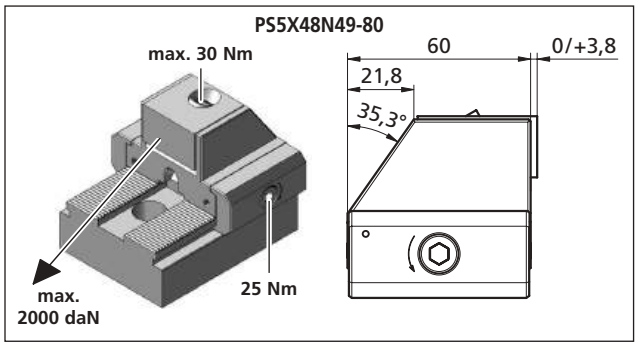
Tilausesimerkki: 1x **PS1F68N34-80** & 1x **B82HM**

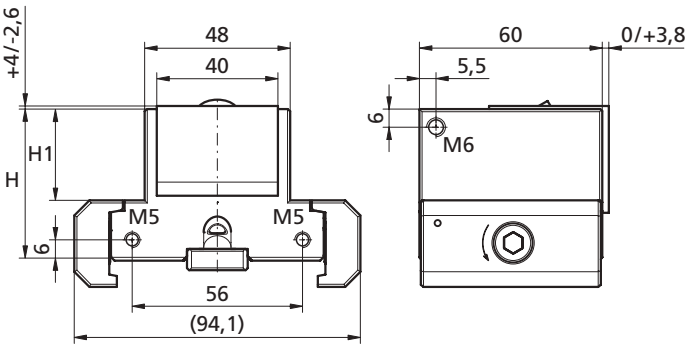
	B80	B80N	B81	B82	B82L33	B82HM	B83	B84	B89F	B89R
C	40	40	40	40	40	40	40	40	40	40
H	25	25	25	25	25	25	25	25	25	25
L	22	22	22	22,2	33	22,2	22	26,3	29	29
D	11	11	11	11	11	11	11	11	11	11
ø	15	15	15	15	15	15	15	15	15	15
i	56HRC	HV700 x0,2mm	56HRC	*	*	56HRC	HV700 x0,2mm	*	HV700 x0,2mm	HV700 x0,2mm
kg	~0,2	~0,2	~0,2	~0,2	~0,28	~0,2	~0,2	~0,2	~0,24	~0,24

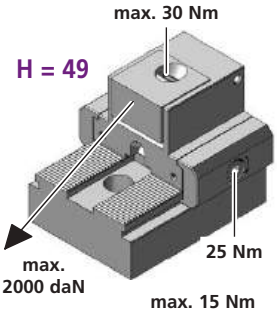


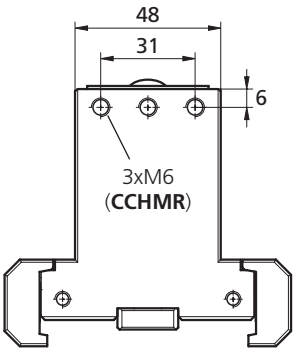
* = pehmeä teräsleuka HM = Kovametallipinnoitettu

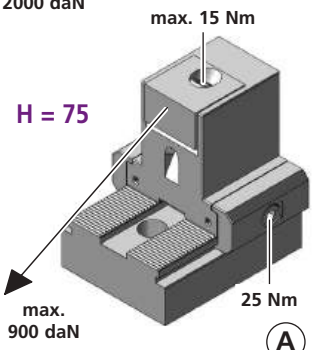
Tilattava erikseen

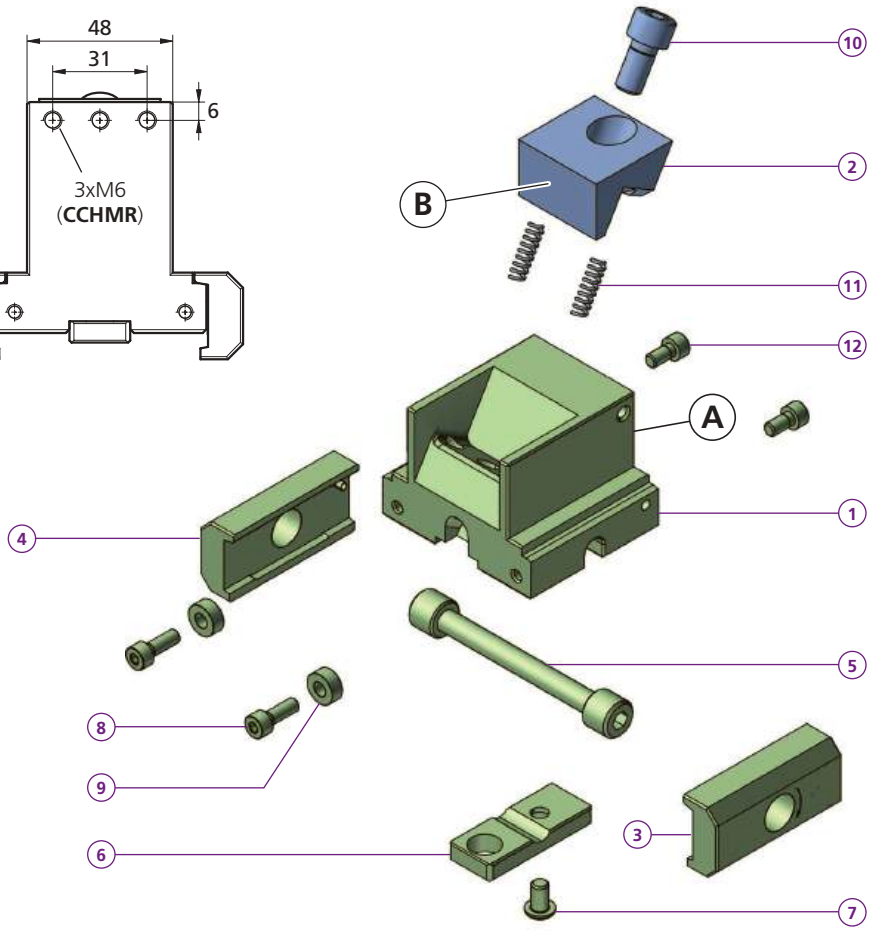












A

PS5X48N49-80

1	1x	TF140469
9	2x	**PCD005**
8	2x	**M5X14ISO4762**
kg		~1,3

PS1F48N49-80

1	1x	TF140467

PS1R48N49-80

1	1x	TF140468
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M10X25ISO4762**
11	2x	**FED0618**
12	2x	**M5X10ISO4762**
H	=	49
H1	=	30
kg		~1,4

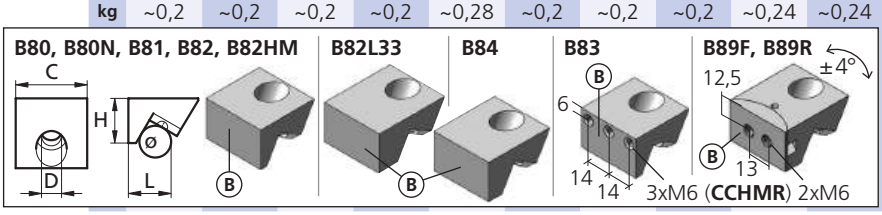
PS1R48N75-80

1	1x	TF140471
H	=	75
H1	=	56
kg		~2,0

B

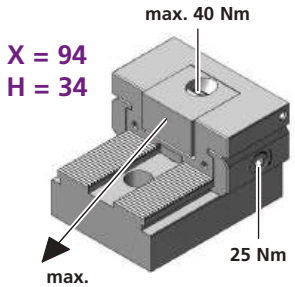
Tilausesimerkki: 1x PS1F48N49-80 & 1x B80

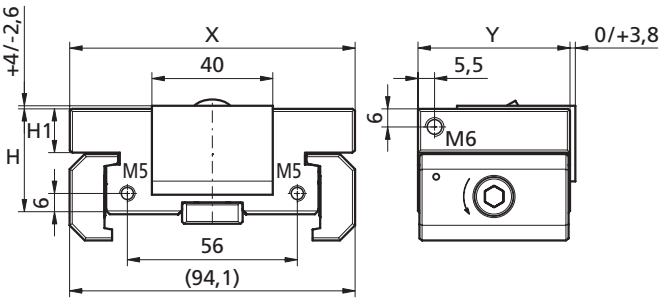
	B80	B80N	B81	B82	B82L33	B82HM	B83	B84	B89F	B89R
C	40	40	40	40	40	40	40	40	40	40
H	25	25	25	25	25	25	25	25	25	25
L	22	22	22	22,2	33	22,2	22	26,3	29	29
D	11	11	11	11	11	11	11	11	11	11
ø	15	15	15	15	15	15	15	15	15	15
i	56HRC	HV700 x0,2mm	56HRC	*	*	56HRC	HV700 x0,2mm	*	HV700 x0,2mm	HV700 x0,2mm
kg	~0,2	~0,2	~0,2	~0,2	~0,28	~0,2	~0,2	~0,2	~0,24	~0,24

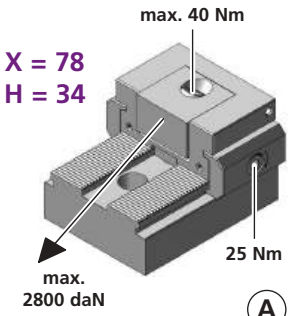


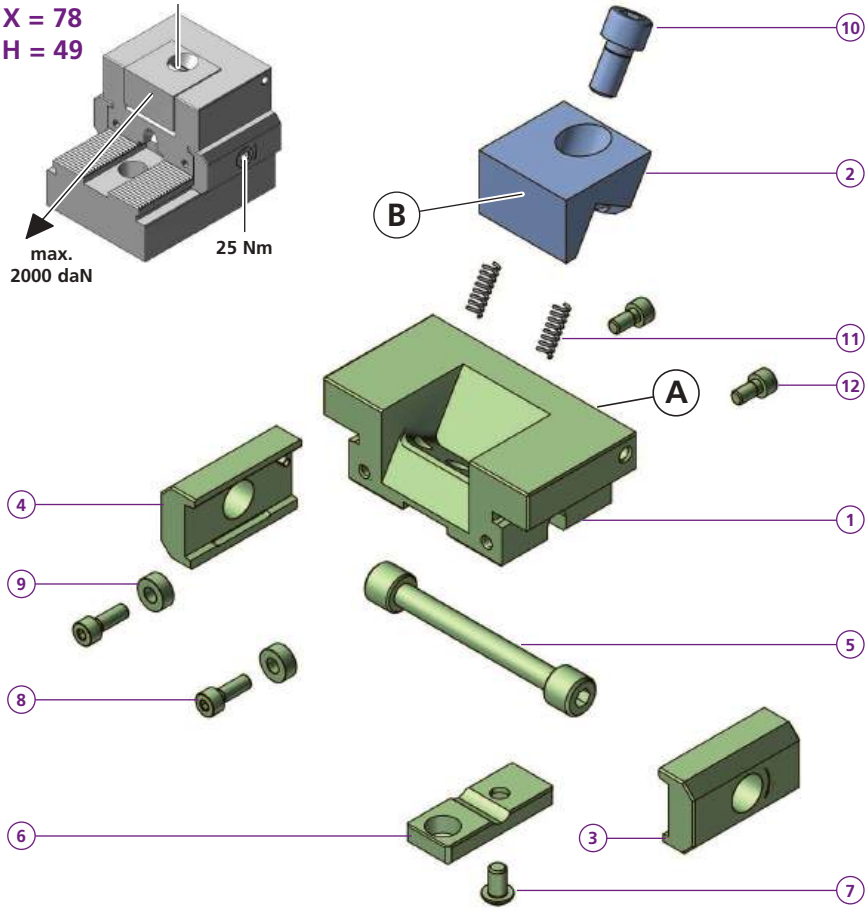
* = pehmeä teräsleuka HM = Kovametallipinnoitettu

Tilattava erikseen









PS1F78N34-80

1	1x	TF140472

PS1R78N34-80

1	1x	TF140473
2	1x	
3	1x	**PCSP50R**
4	1x	**PCSP50L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M10X25ISO4762**
11	2x	**FED0618**
12	2x	**M5X10ISO4762**
X	=	48
H	=	34
H1	=	15
Y	=	50
kg		~1,1

PS1F94N34-80

1	1x	TF140476

PS1R94N34-80

1	1x	TF140477
X	=	94
H	=	34
H1	=	15
Y	=	50
kg		~1,1

PS1F78N49-80

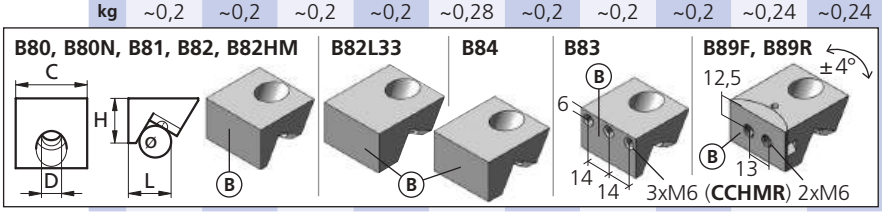
1	1x	TF140474

PS1R78N49-80

1	1x	TF140475
3	1x	**PCSP60R**
4	1x	**PCSP60L**
X	=	78
H	=	49
H1	=	30
Y	=	60
kg		~1,8

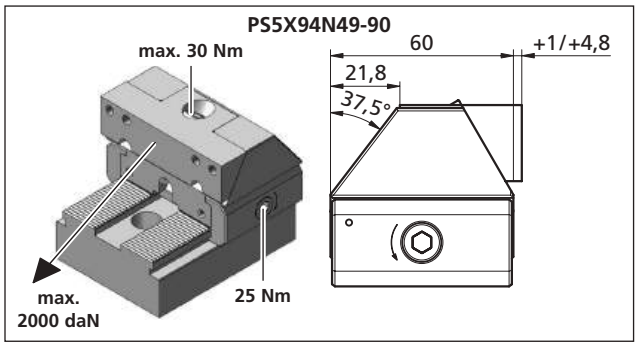
Tilausesimerkki: 1x PS1R94N34-80 & 1x B80

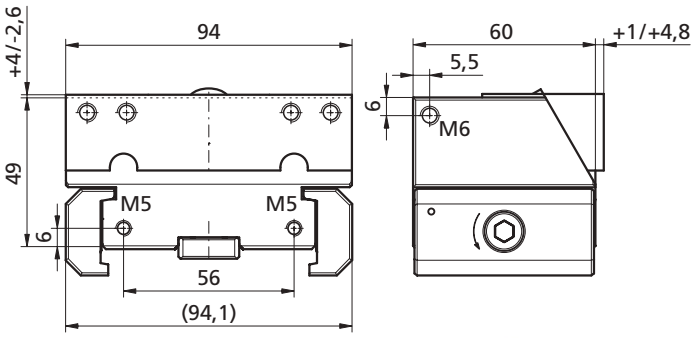
B	B80	B80N	B81	B82	B82L33	B82HM	B83	B84	B89F	B89R
C	40	40	40	40	40	40	40	40	40	40
H	25	25	25	25	25	25	25	25	25	25
L	22	22	22	22,2	33	22,2	22	26,3	29	29
D	11	11	11	11	11	11	11	11	11	11
ø	15	15	15	15	15	15	15	15	15	15
i	56HRC	HV700 x0,2mm	56HRC	*	*	56HRC	HV700 x0,2mm	*	HV700 x0,2mm	HV700 x0,2mm
kg	~0,2	~0,2	~0,2	~0,2	~0,28	~0,2	~0,2	~0,2	~0,24	~0,24



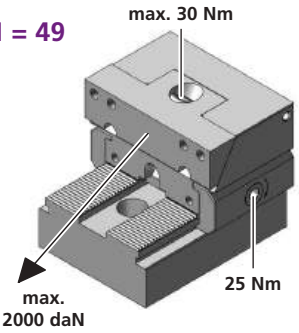
* = pehmeä teräsleuka HM = Kovametallipinnoitettu

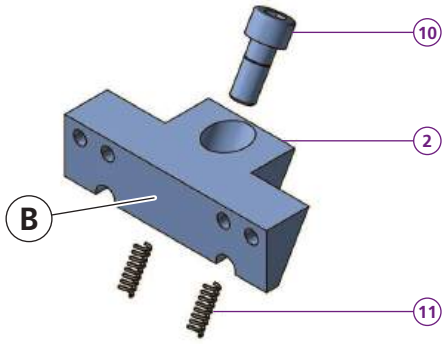
Tilattava erikseen

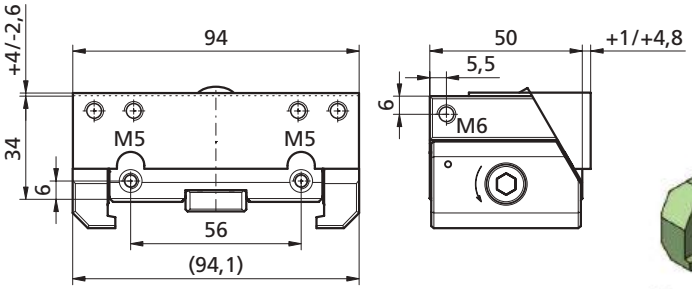


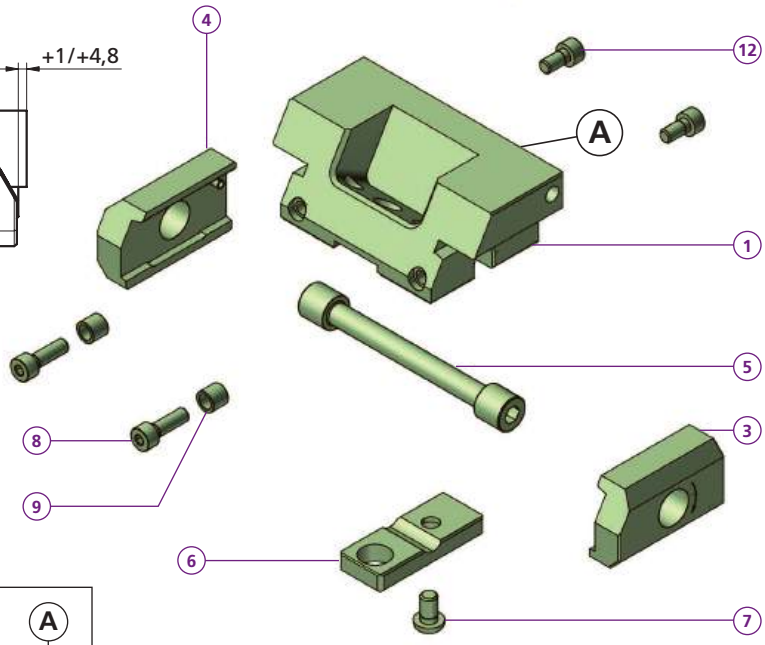


H = 49

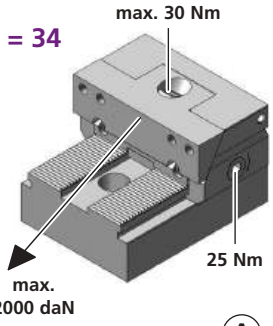








H = 34



PS1F94N34-90

1	1x	TF140478

PS1R94N34-90

1	1x	TF140479
2	1x	
3	1x	**PCSP50RF**
4	1x	**PCSP50LF**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	2x	**M5X16ISO4762**
9	2x	**PCD008**
10	1x	**M10X25ISO4762**
11	2x	**FED0618**
12	2x	**M5X10ISO4762**
H	=	34
kg		~1,0

PS5X94N49-90

1	1x	TF140482
3	1x	**PCSP60R**
4	1x	**PCSP60L**
9	2x	**PCD005**
8	2x	**M5X14ISO4762**
kg		~1,8

PS1F94N49-90

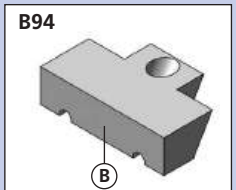
1	1x	TF140480

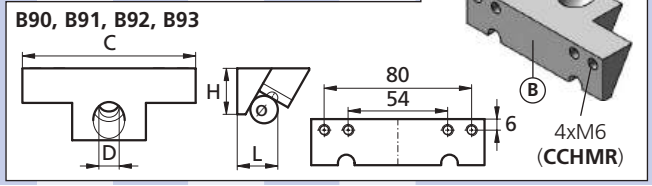
PS1R94N49-90

1	1x	TF140481
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
H	=	49
kg		~2,0

Tilausesimerkki: 1x **PS1F94N34-90** & 1x **B91**

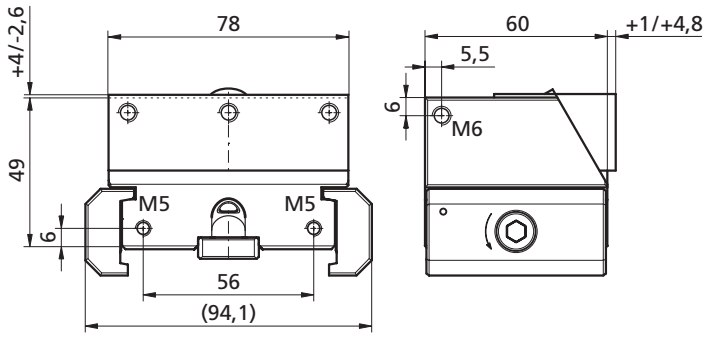
	B90	B91	B92	B93	B94
C	94	94	94	94	94
H	25	25	25	25	25
L	23	23	23	23	40
D	11	11	11	11	11
ø	15	15	15	15	15
i	HV700 x0,2mm	HV700 x0,2mm	*	HV700 x0,2mm	*
kg	~0,33	~0,33	~0,33	~0,33	~0,64

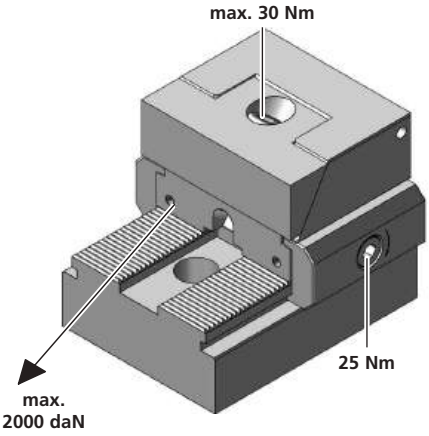


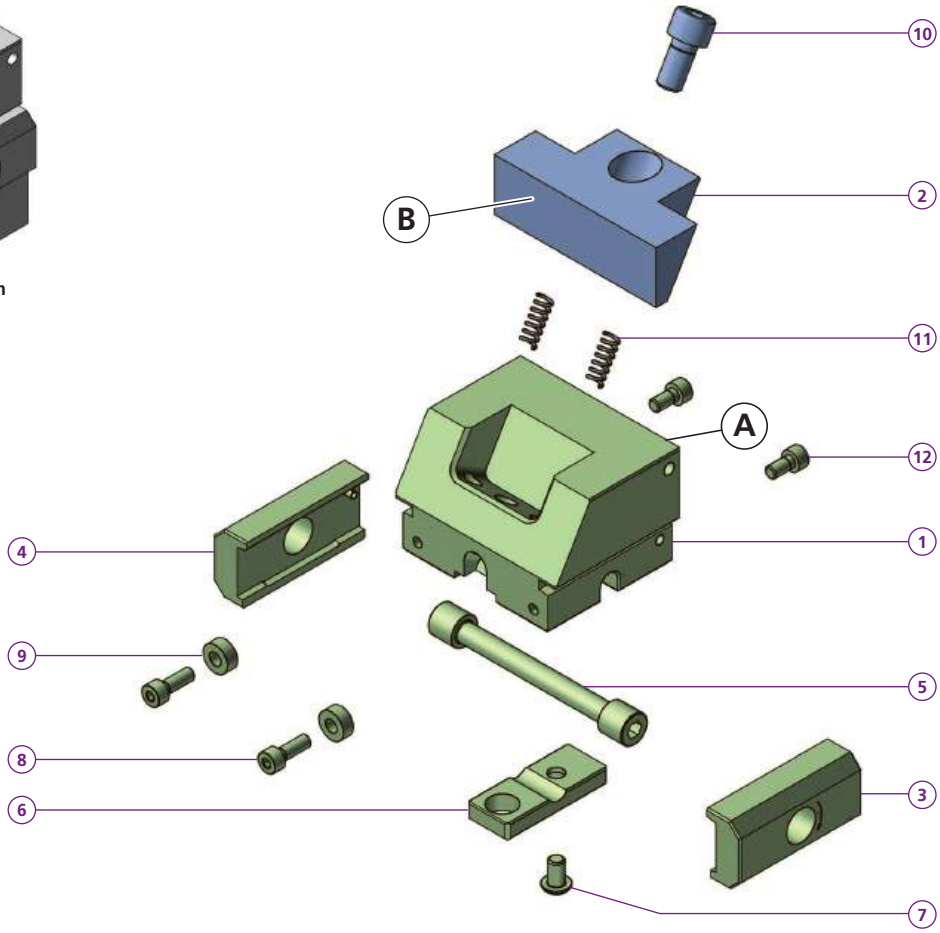


* = pehmeä teräsleuka

Tilattava erikseen







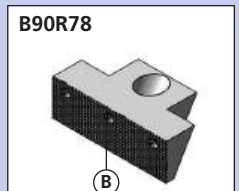
A

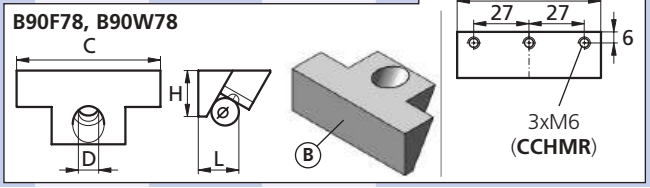
	PS1F78N49-90	
1	1x	TH160490
	PS1R78N49-90	
1	1x	TH160490
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M10X25ISO4762**
11	2x	**FED0618**
12	2x	**M5X10ISO4762**
kg		~1,8

B

Tilausesimerkki: 1x PS1F78N49-90 & 1x B90F78

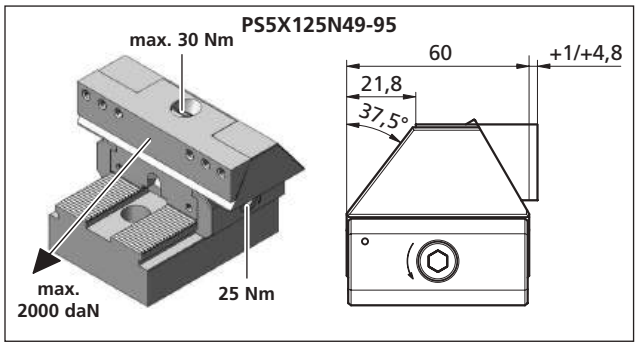
	B90F78	B90W78	B90R78
C	78	78	78
H	25	25	25
L	23	28	23
D	11	11	11
ø	15	15	15
i	HV700 x0,2mm	*	HV700 x0,2mm
kg	~0,3	~0,37	~0,3

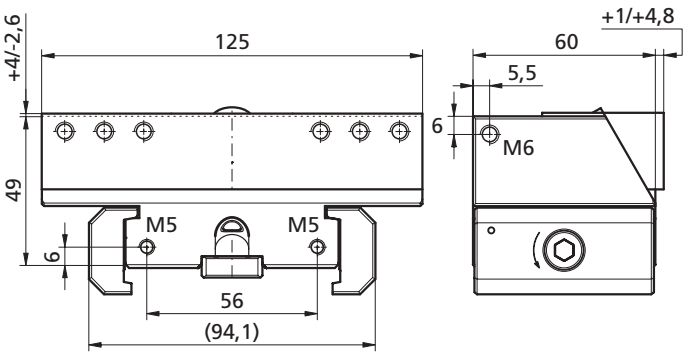


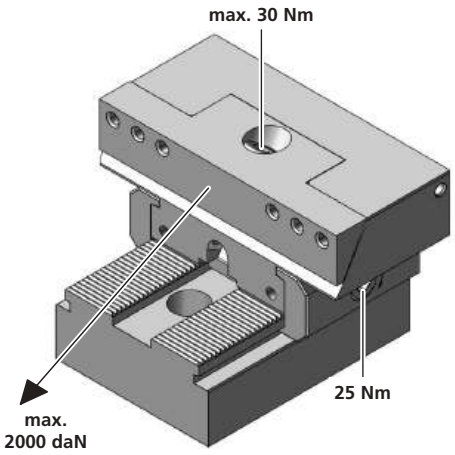


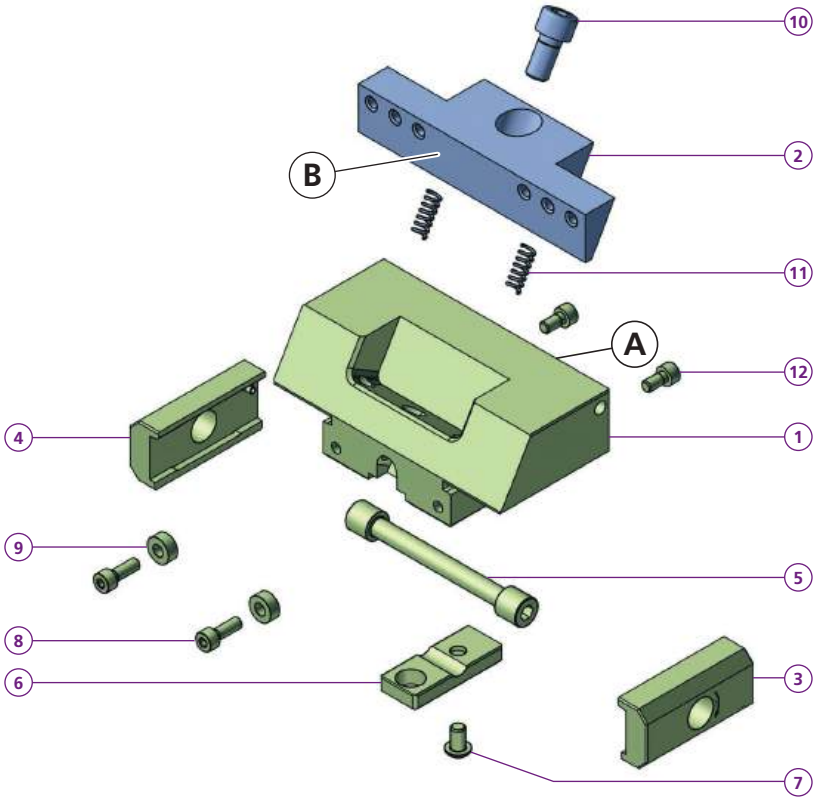
* = pehmeä teräsleuka

Tilattava erikseen









A

37,5°

PS5X125N49-95

1	1x	TF140485
9	2x	**PCD005**
8	2x	**M5X14ISO4762**
kg		~2,0

PS1F125N49-95

1	1x	TF140483

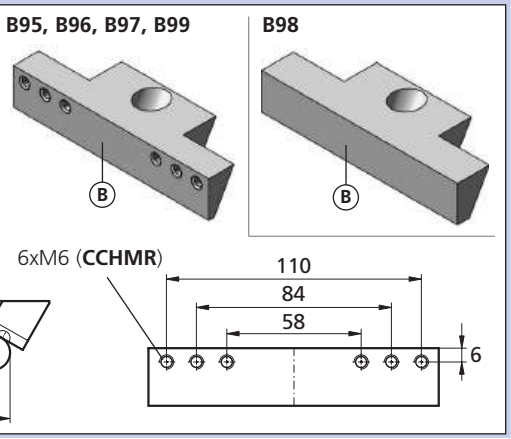
PS1R125N49-95

1	1x	TF140484
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M10X25ISO4762**
11	2x	**FED0618**
12	2x	**M5X10ISO4762**
kg		~2,3

B

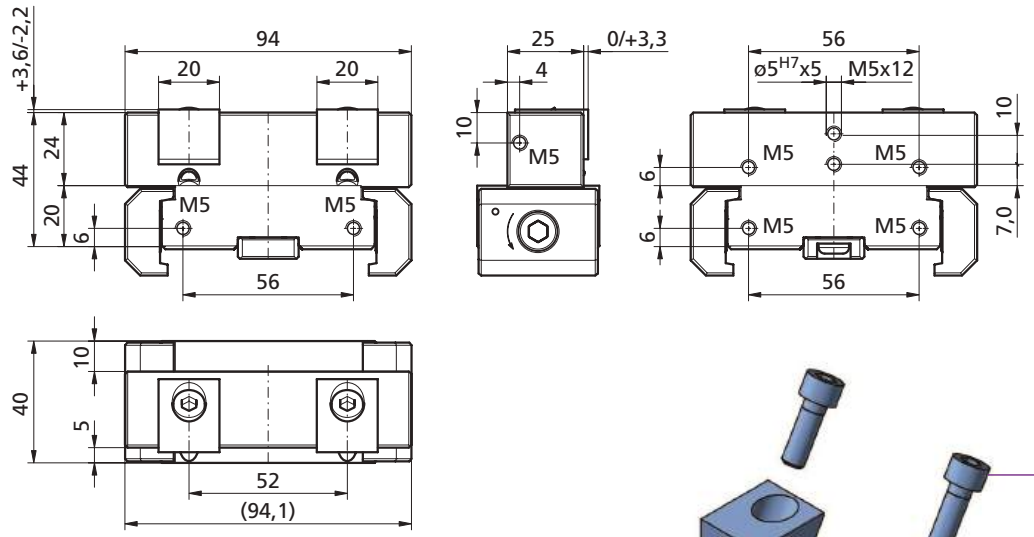
Tilausesimerkki: 1x PS5X125N49-95 & 1x B95

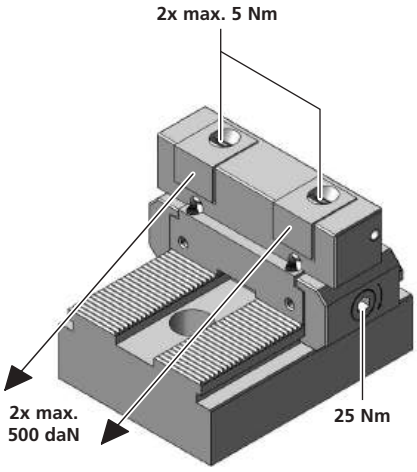
	B95	B96	B97	B98	B99
C	125	125	125	125	125
H	25	25	25	25	25
L	23	23	23	30	23
D	11	11	11	11	11
ø	15	15	15	15	15
i	HV700 x0,2mm	HV700 x0,2mm	*	*	HV700 x0,2mm
kg	~0,46	~0,45	~0,46	~0,63	~0,45

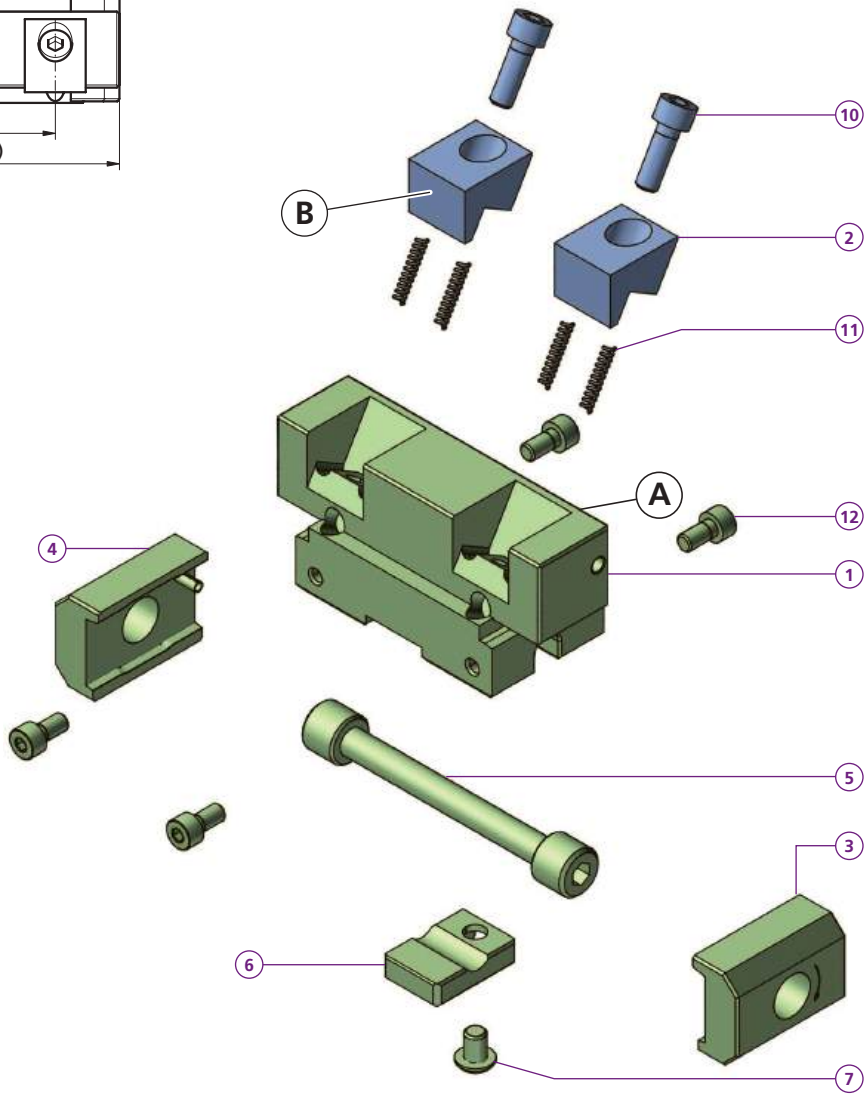


* = pehmeä teräsleuka

Tilattava erikseen



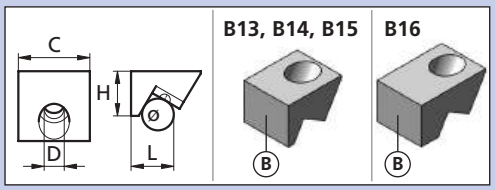




Tilausesimerkki: 1x **PS2G94N44-13** & 2x **B14**

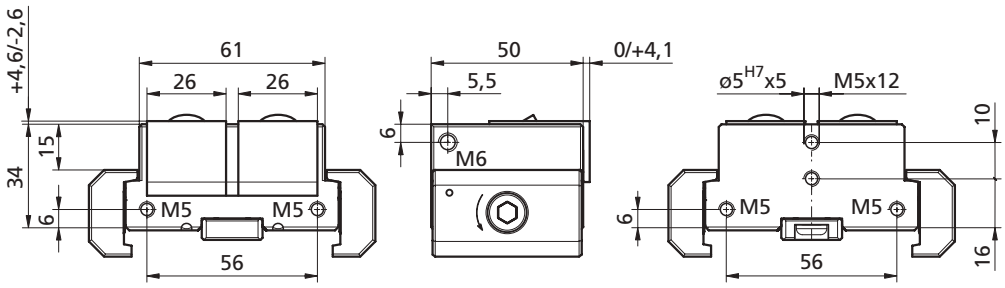
PS2G94N44-13		
1	1x	TF140486
2	2x	
3	1x	**PCSP40R**
4	1x	**PCSP40L**
5	1x	**PCS14**
6	1x	**PCGU2030**
7	1x	**M6X8ISO7380**
10	2x	**M6X16ISO4762**
11	4x	**FED0318**
12	4x	**M5X10ISO4762**
kg		~1,0

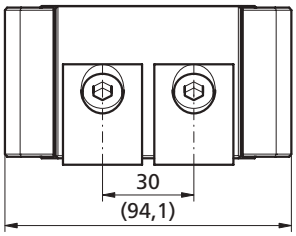
	B13	**B14**	**B15**	**B16**
C	20	20	20	20
H	16	16	16	16
L	13,8	13,8	13,8	19
D	6,5	6,5	6,5	6,5
ø	10	10	10	10
i	HV700 x0,2mm	HV700 x0,2mm	*	*
kg	~0,05	~0,05	~0,05	~0,06

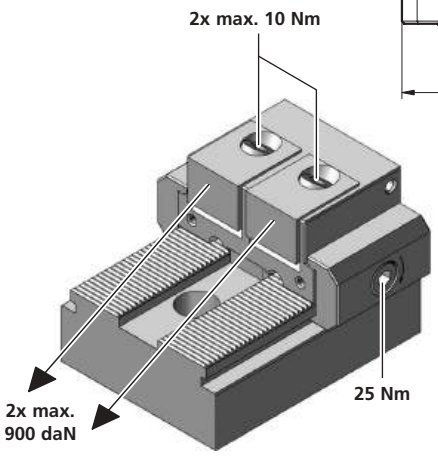


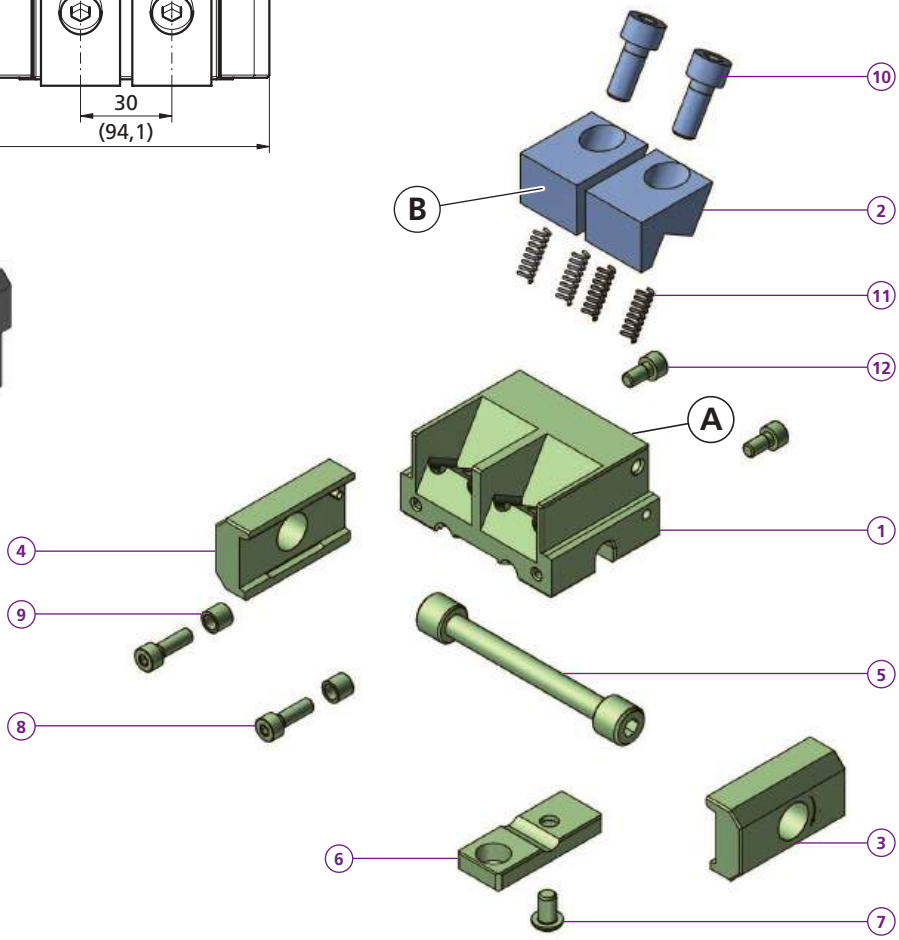
* = pehmeä teräsleuka

Tilattava erikseen









PS2F61N34-45

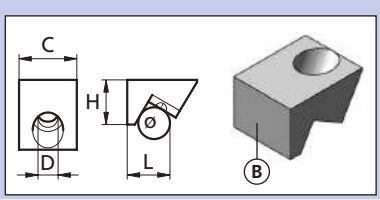
1	1x	TF140487

PS2R61N34-45

1	1x	TF140488
2	2x	
3	1x	**PCSP50R**
4	1x	**PCSP50L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	2x	**M5X16ISO4762**
9	2x	**PCD008**
10	2x	**M8X20ISO4762**
11	4x	**FED0618**
12	2x	**M5X10ISO4762**
kg		~1,0

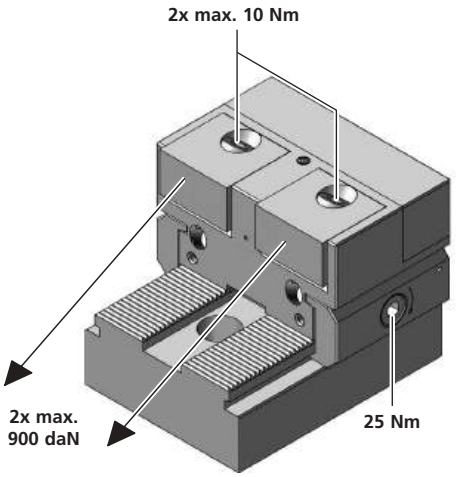
Tilausesimerkki: 1x PS2R61N34-45 & 2x B47HM

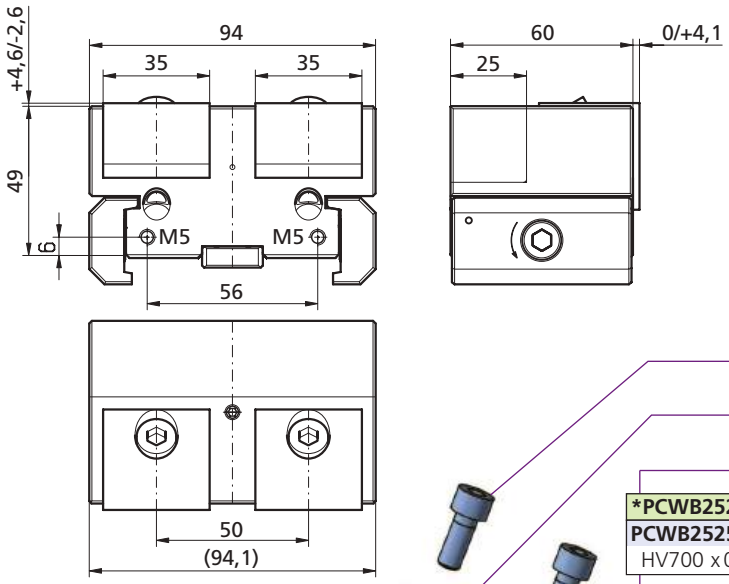
	B45	B46	B47	B47HM
C	26	26	26	26
H	20	20	20	20
L	19	19	19,1	19,1
D	9	9	9	9
ø	12	12	12	12
i	HV700 x0,2mm	HV700 x0,2mm	*	HM
kg	~0,1	~0,1	~0,1	~0,1

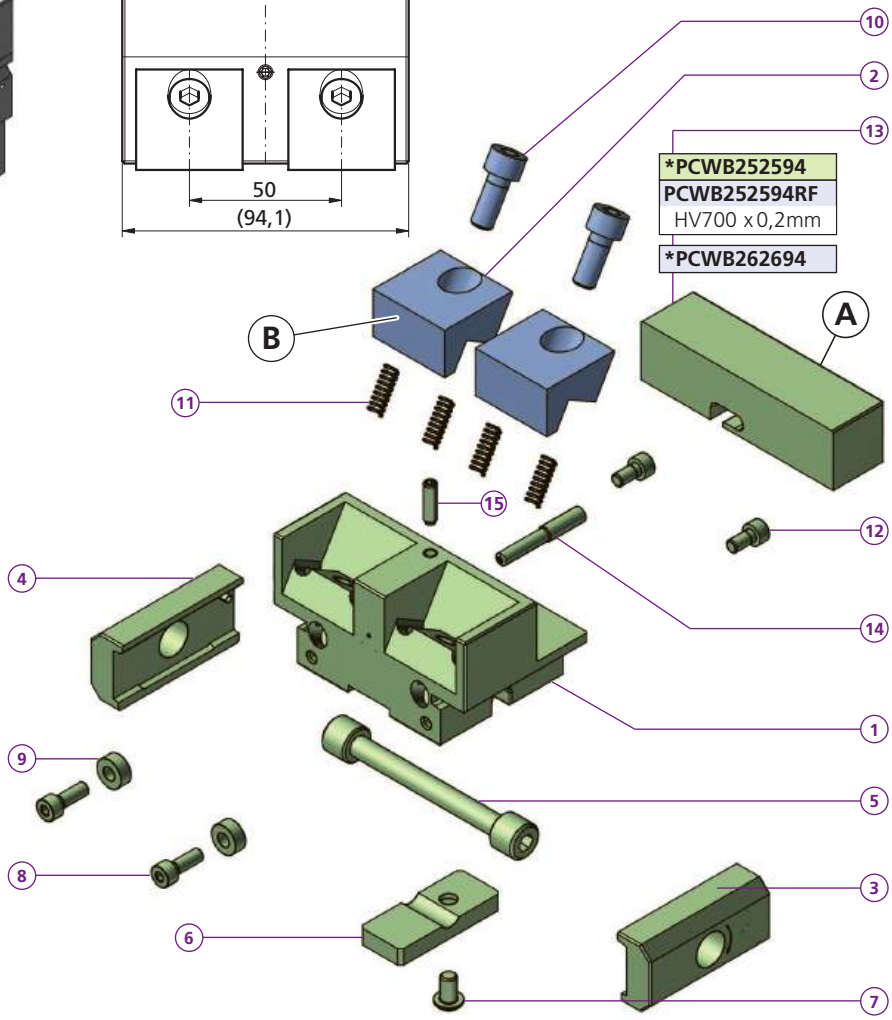


* = pehmeä teräsleuka HM = Kovametallipinnoitettu

Tilattava erikseen



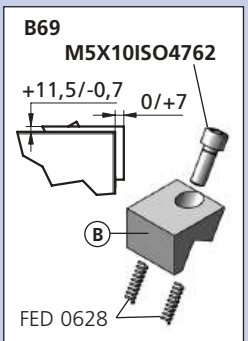


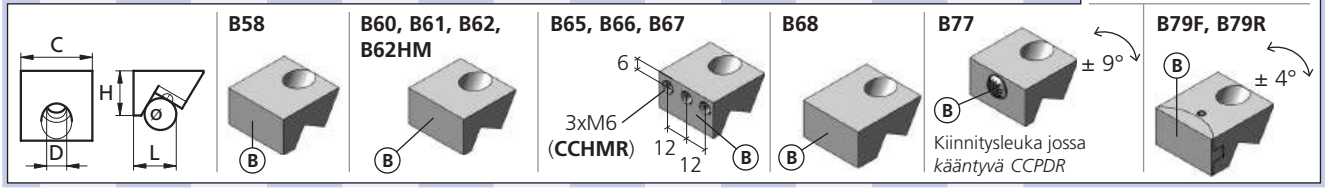


PS2X94N49-60		
1	1x	TF140489
2	2x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	2x	**M8X20ISO4762**
11	4x	**FED0618**
12	2x	**M5X10ISO4762**
13	1x	**PCWB252594**
14	1x	PCBO060540
15	1x	**M5X16ISO4026**
kg		~1,2

Tilausesimerkki: 1x **PS2X94N49-60** & 2x **B58**

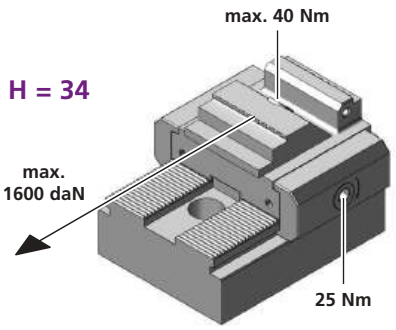
	B58	B60	B61	B62	B62HM	B65	B66	B67	B68	B69	B77	B79F	B79R
C	35	35	35	35	35	35	35	35	35	35	35	35	35
H	20	20	20	20	20	20	20	20	20	25	20	20	20
L	26	19	19	19	19	19	19	24	26	22	22	25	25
D	9	9	9	9	9	9	9	9	9	9	9	9	9
ø	12	12	12	12	12	12	12	12	12	12	12	12	12
i	ALU	56 HRC	56 HRC	*	HM	HV700 x0,2mm	HV700 x0,2mm	HV700 x0,2mm	*	*	56 HRC	HV700 x0,2mm	HV700 x0,2mm
kg	~0,07	~0,12	~0,12	~0,12	~0,12	~0,12	~0,12	~0,14	~0,15	~0,15	~0,12	~0,18	~0,18

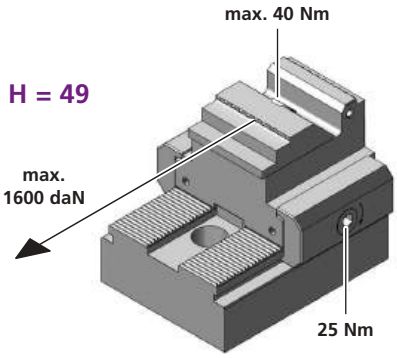


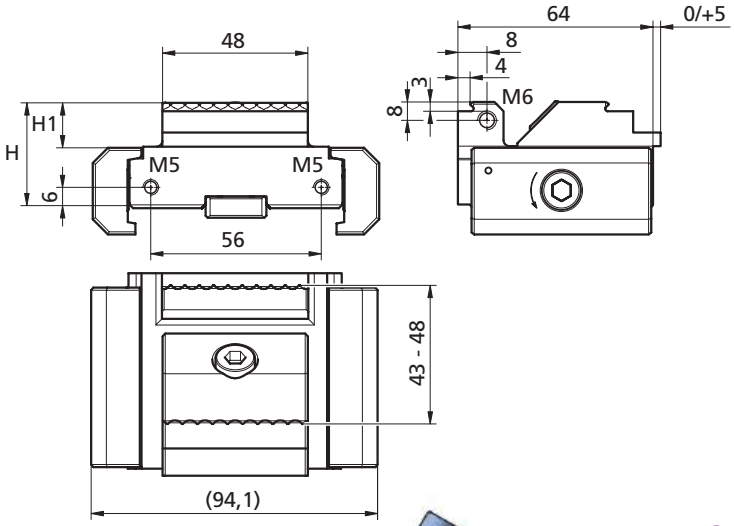


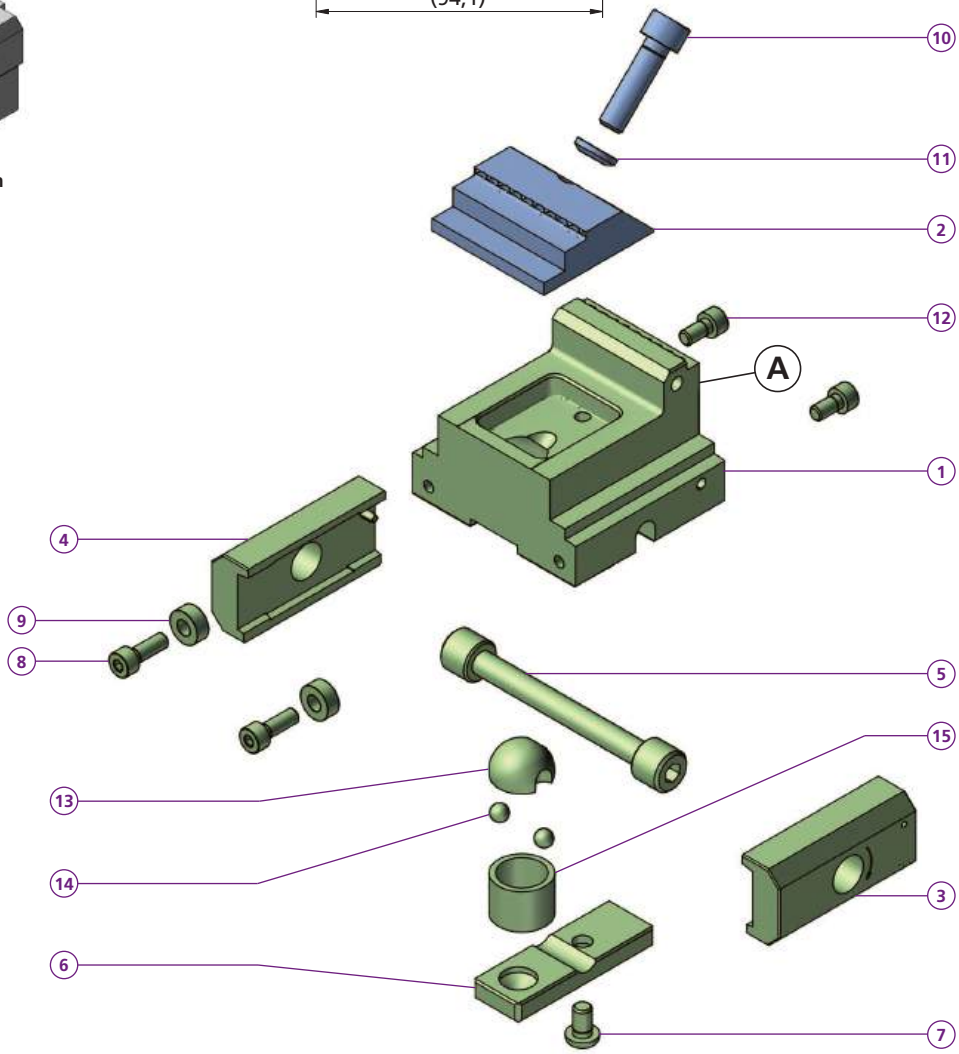
* = pehmeä teräsleuka HM = Kovametallipinnoitettu ALU = ENAW-7022

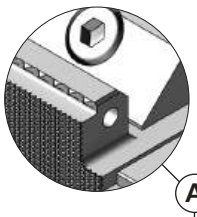
Tilattava erikseen











PS1P48L34-105

1	1x	TW100098-01
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2059**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M8X28ISO4762**
11	1x	PCUSR16
12	2x	**M5X10ISO4762**
13	1x	PCKMR45M8
14	2x	D=6 DIN 5401
H	=	34
H1	=	15
kg		~1,0

sivu 84, 85

PS1PF48L34-105

1	1x	TK140780
H	=	49
H1	=	30
kg		~1,0

PS1P48L49-105

1	1x	TK120011
15	1x	PCD20L15
H	=	49
H1	=	30
kg		~1,4

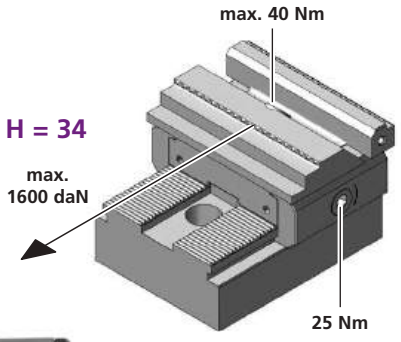
PS1PF48L49-105

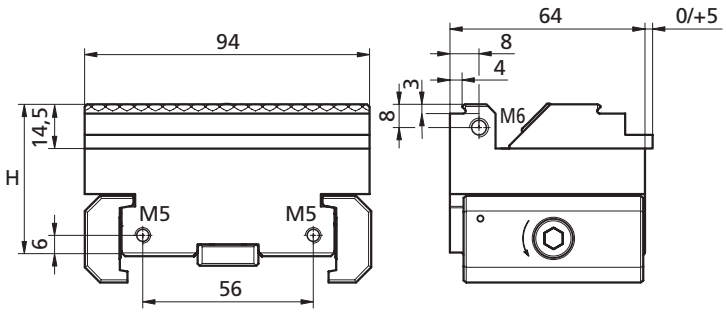
1	1x	TK140781
15	1x	PCD20L15
H	=	49
H1	=	30
kg		~1,4

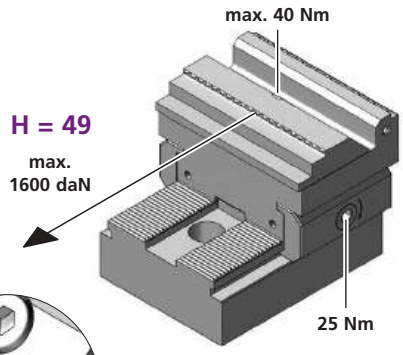
Tilausesimerkki: 1x PS1P48L34-105 & 1x B115

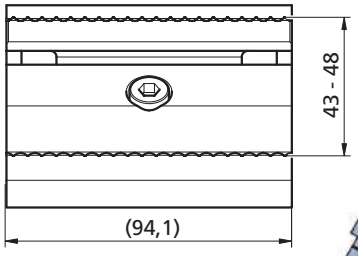
Kiristys momentti		Puristusvoima		
Nm	**(lb-ft)**	**~daN**	**~(lb)**	**~t**
10	7,4	= 400	880	0,4
20	14,8	= 800	1´760	0,8
30	22,2	= 1´200	2´650	1,2
40	29,6	= 1´600	3´530	1,6

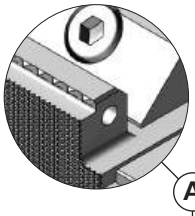
Tilattava erikseen

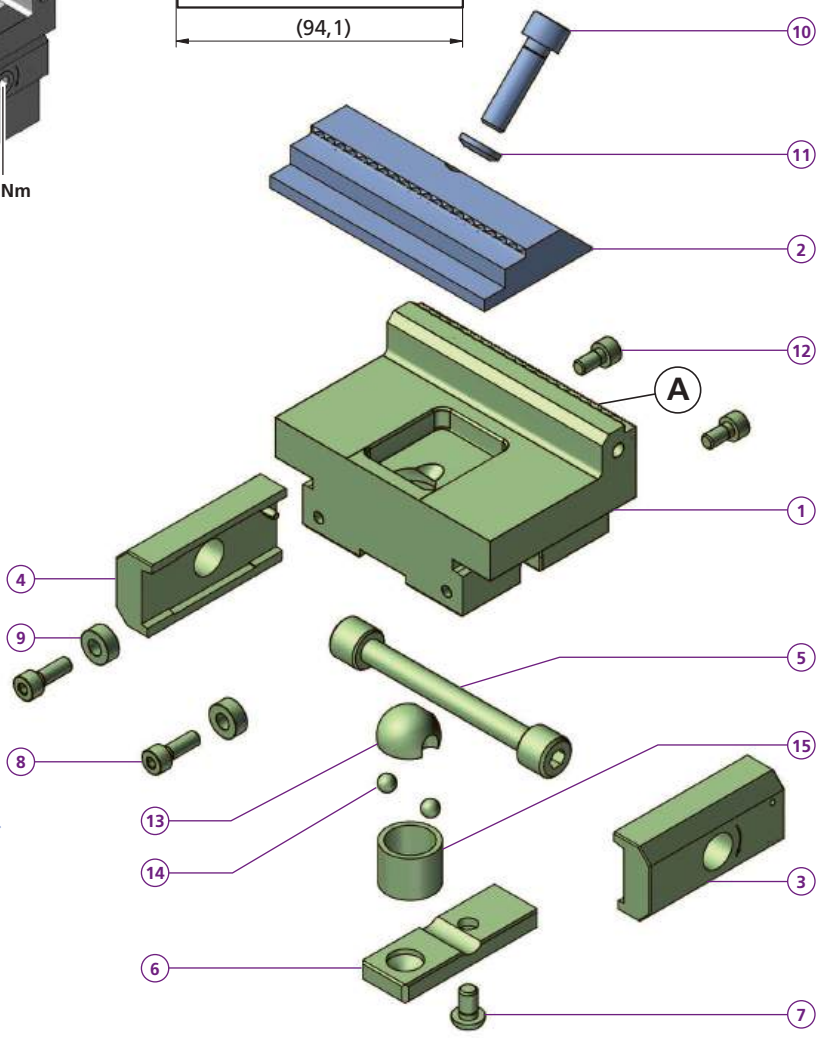








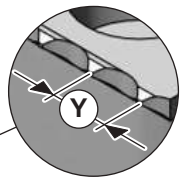




PS1P94L34-105

1	1x	TW100100-01
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2059**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M8X28ISO4762**
11	1x	PCUSR16
12	2x	**M5X10ISO4762**
13	1x	PCKMR45M8
14	2x	D=6 DIN 5401
H	=	34
kg		~1,1

sivu 84, 85



PS1P694L34-105

1	1x	TW100100-02
Y		6,0 mm
kg		~1,1

PS1PF94L34-105

1	1x	TK140782
H	=	49
kg		~1,1

PS1P94L49-105

1	1x	TK120857
15	1x	PCD20L15
H	=	49
kg		~1,8

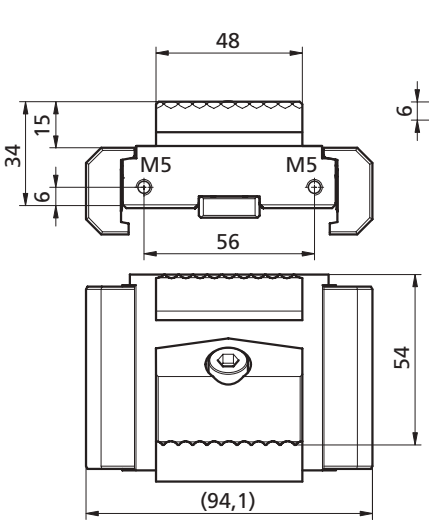
PS1PF94L49-105

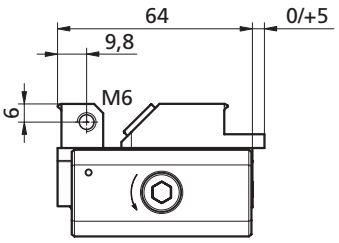
1	1x	TK140783
15	1x	PCD20L15
H	=	49
kg		~1,8

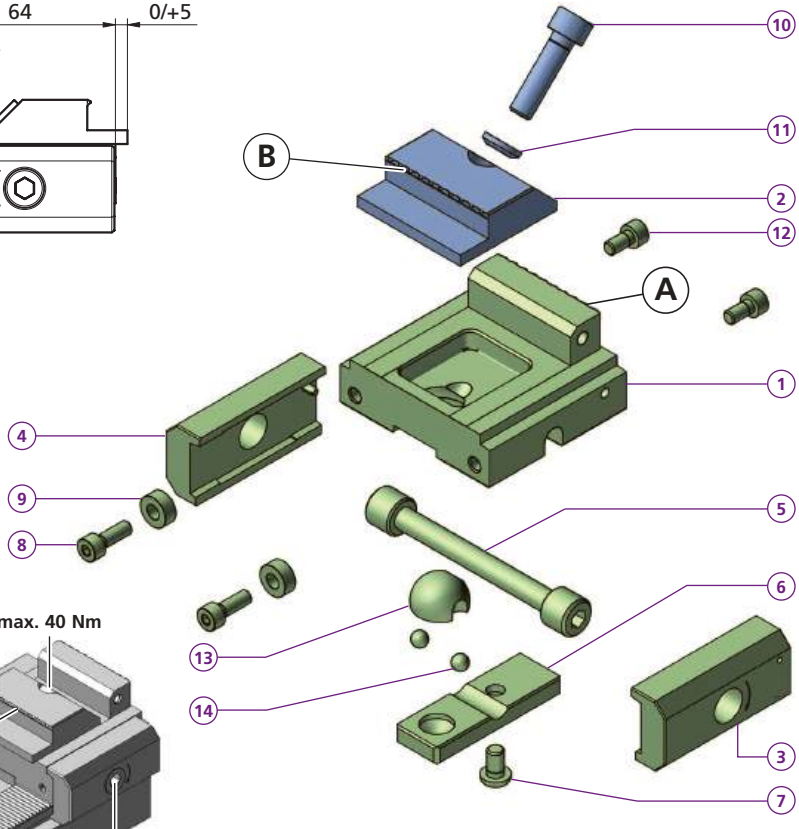
Tilausesimerkki: 1x **PS1P94L34-105** & 1x **B120**

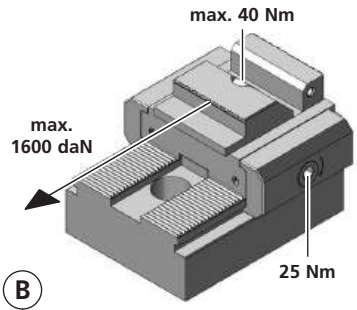
Kiristys momentti		Puristusvoima		
Nm	(lb-ft)	~daN	~(lb)	~t
10	7,4	= 400	880	0,4
20	14,8	= 800	1´760	0,8
30	22,2	= 1´200	2´650	1,2
40	29,6	= 1´600	3´530	1,6

Tilattava erikseen







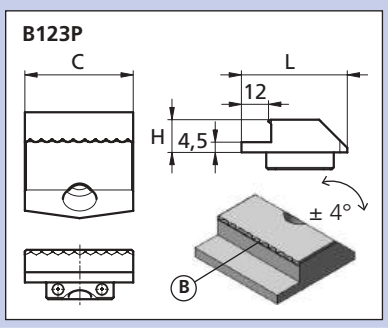


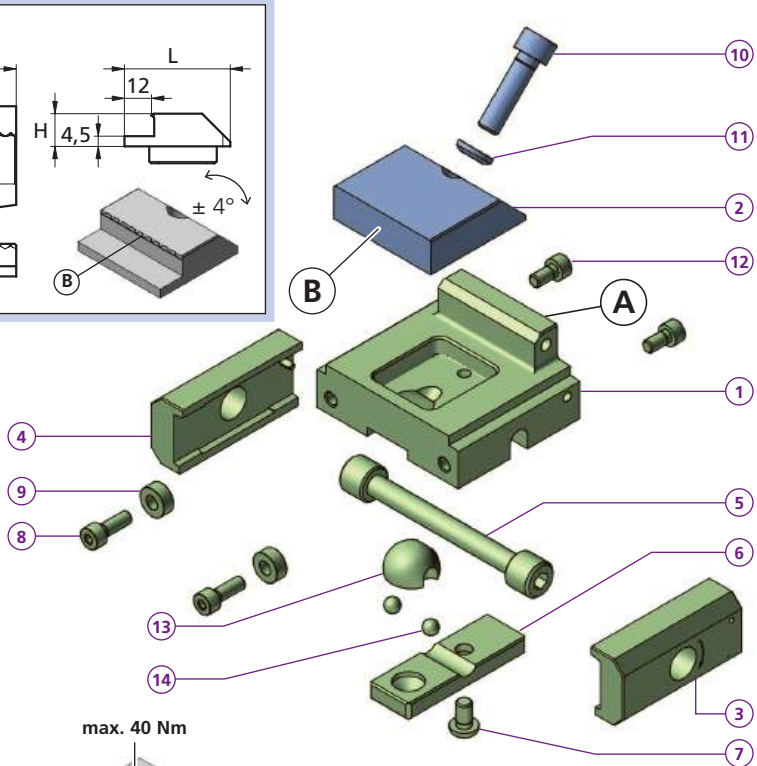
PS1PV48L34-105

1	1x	TK140762
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2059**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M8X28ISO4762**
11	1x	PCUSR16
12	2x	**M5X10ISO4762**
13	1x	PCKMR45M8
14	2x	D=6 DIN 5401
kg		~1,0

B123P

C	48
H	14,5
L	47
i	56HRC
kg	~0,21





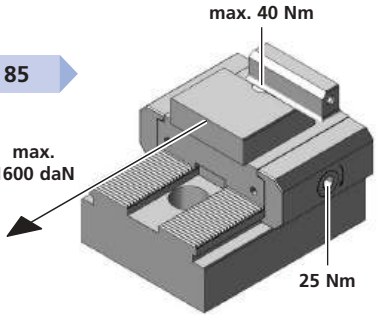
PS1R48L34-105

1	1x	TF140573

PS1F48L34-105

1	1x	TF140572
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2059**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M8X30ISO4762**
11	1x	PCUSR14
12	2x	**M5X10ISO4762**
13	1x	PCKMR45M8
14	2x	D=6 DIN 5401
kg		~1,0

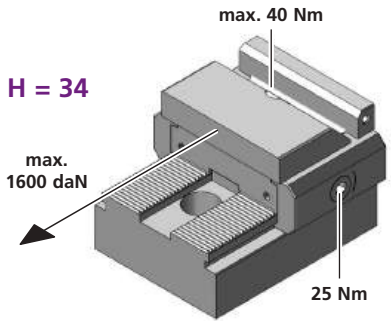
sivu 84, 85

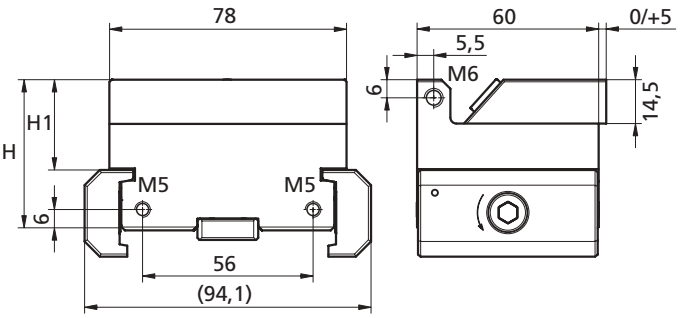


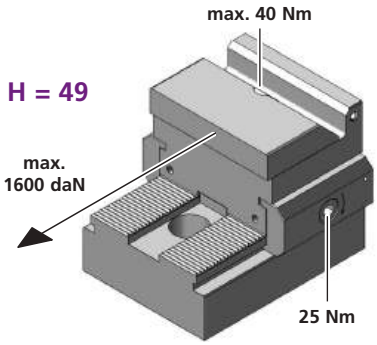
Tilausesimerkki:1x **PS1R48L34-105**
& 1x **B123P**

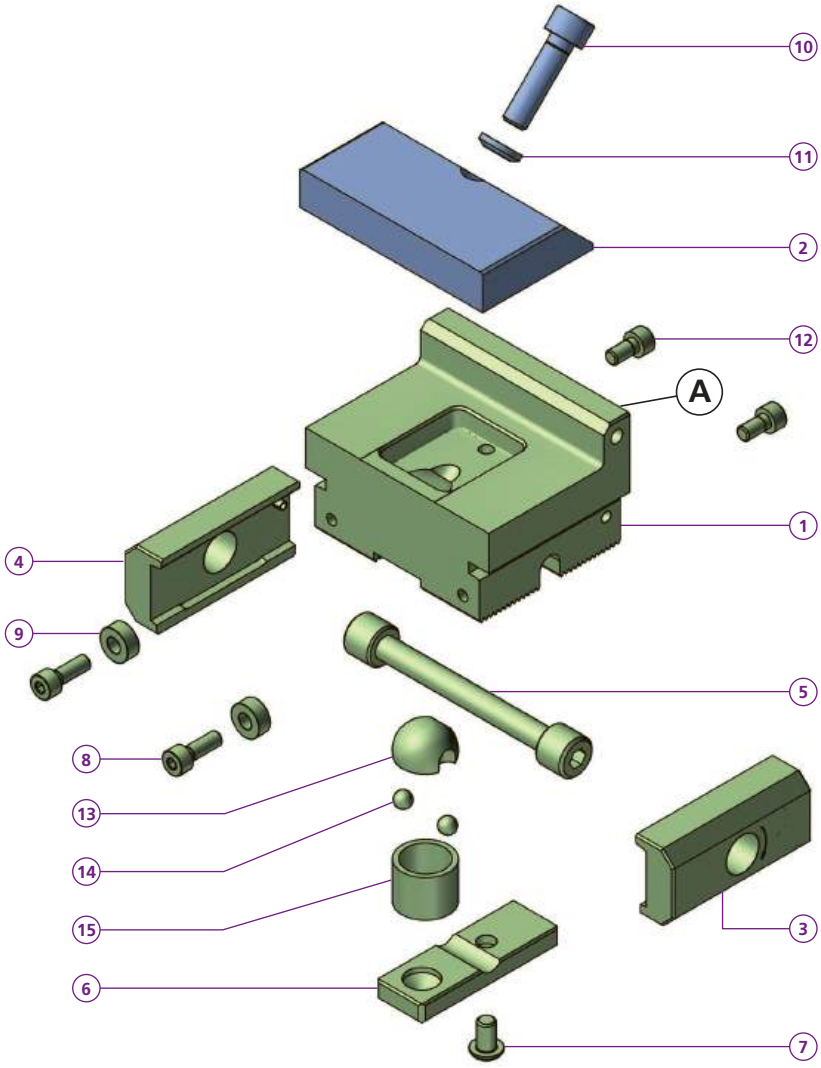
Kiristys momentti		Puristusvoima		
Nm	**(lb-ft)**	**~daN**	**~(lb)**	**~t**
10	7,4	= 400	880	0,4
20	14,8	= 800	1´760	0,8
30	22,2	= 1´200	2´650	1,2
40	29,6	= 1´600	3´530	1,6

Tilattava erikseen









A

PS1R78L34-105

1 1x TF140575

PS1F78L34-105

1 1x TF140574
2 1x
3 1x **PCSP60R**
4 1x **PCSP60L**
5 1x **PCS14**
6 1x **PCGU2059**
7 1x **M6X8ISO7380**
8 2x **M5X14ISO4762**
9 2x **PCD005**
10 1x **M8X30ISO4762**
11 1x PCUSR14
12 2x **M5X10ISO4762**
13 1x PCKMR45M8
14 2x D=6 DIN 5401
H = 34
H1 = 15
kg ~1,0

sivu 84, 85

PS1R78L49-105

1 1x TK110399
15 2x PCD20L15

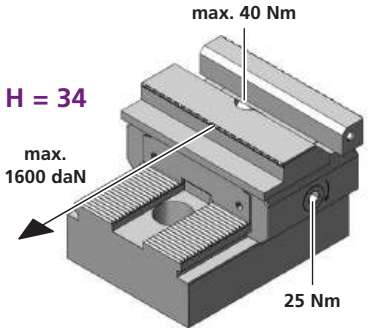
PS1F78L49-105

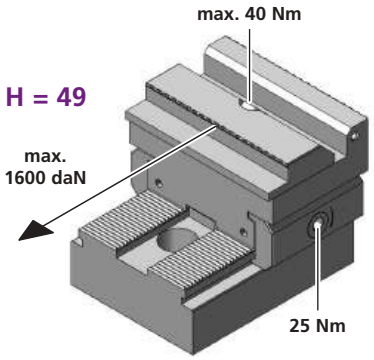
1 1x TK110400
15 2x PCD20L15
H = 49
H1 = 30
kg ~1,5

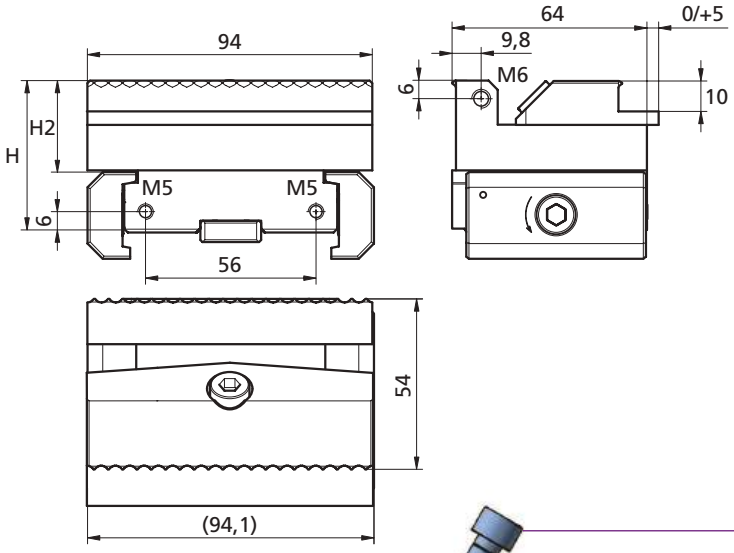
Tilausesimerkki:1x PS1R48L34-105
& 1x B105

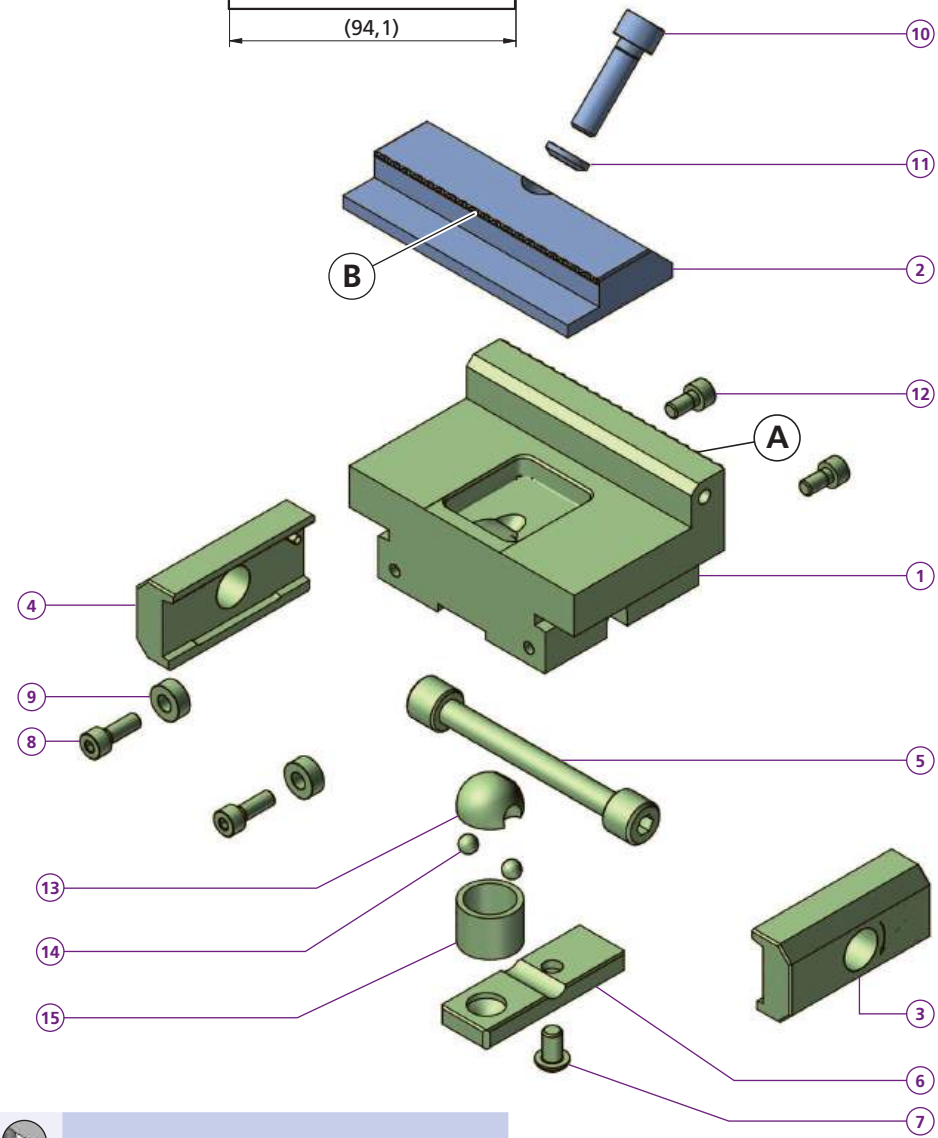
Kiristys momentti		Puristusvoima		
Nm	**(lb-ft)**	**~daN**	**~(lb)**	**~t**
10	7,4	= 400	880	0,4
20	14,8	= 800	1´760	0,8
30	22,2	= 1´200	2´650	1,2
40	29,6	= 1´600	3´530	1,6

Tilattava erikseen









PS1PV94L34-105

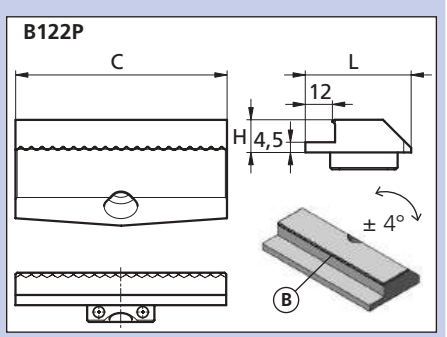
1	1x	TK120230
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2059**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M8X28ISO4762**
11	1x	PCUSR16
12	2x	**M5X10ISO4762**
13	1x	PCKMR45M8
14	2x	D=6 DIN 5401
H	=	34
H1	=	15
kg		~1,1

PS1PV94L49-105

1	1x	TK110250
15	1x	PCD20L15
H	=	49
H1	=	30
kg		~1,8

B122P

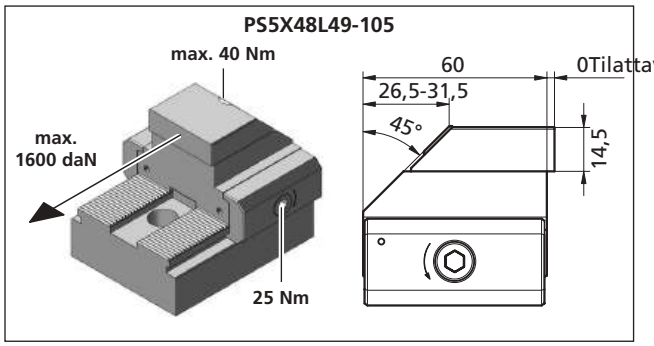
C	94
H	14,5
L	47
i	56HRC
kg	~0,37

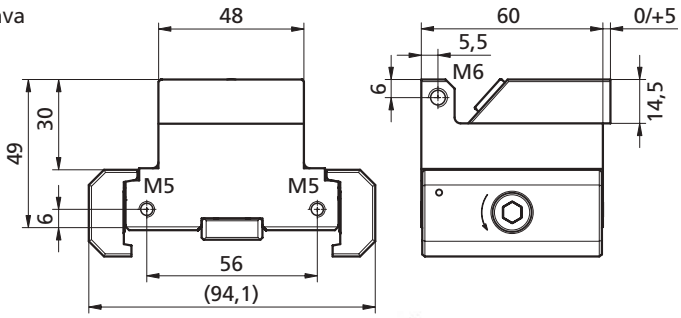


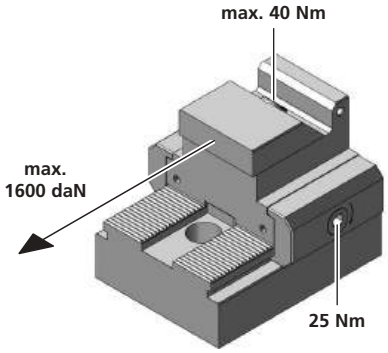
Tilausesimerkki: 1x PS1PV94L49-105
& 1x B122P

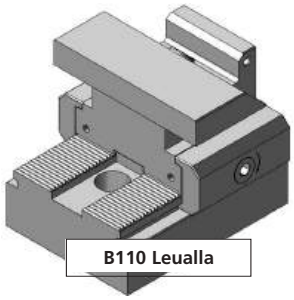
Kiristys momentti		Puristusvoima		
Nm	**(lb-ft)**	**~daN**	**~(lb)**	**~t**
10	7,4	= 400	880	0,4
20	14,8	= 800	1´760	0,8
30	22,2	= 1´200	2´650	1,2
40	29,6	= 1´600	3´530	1,6

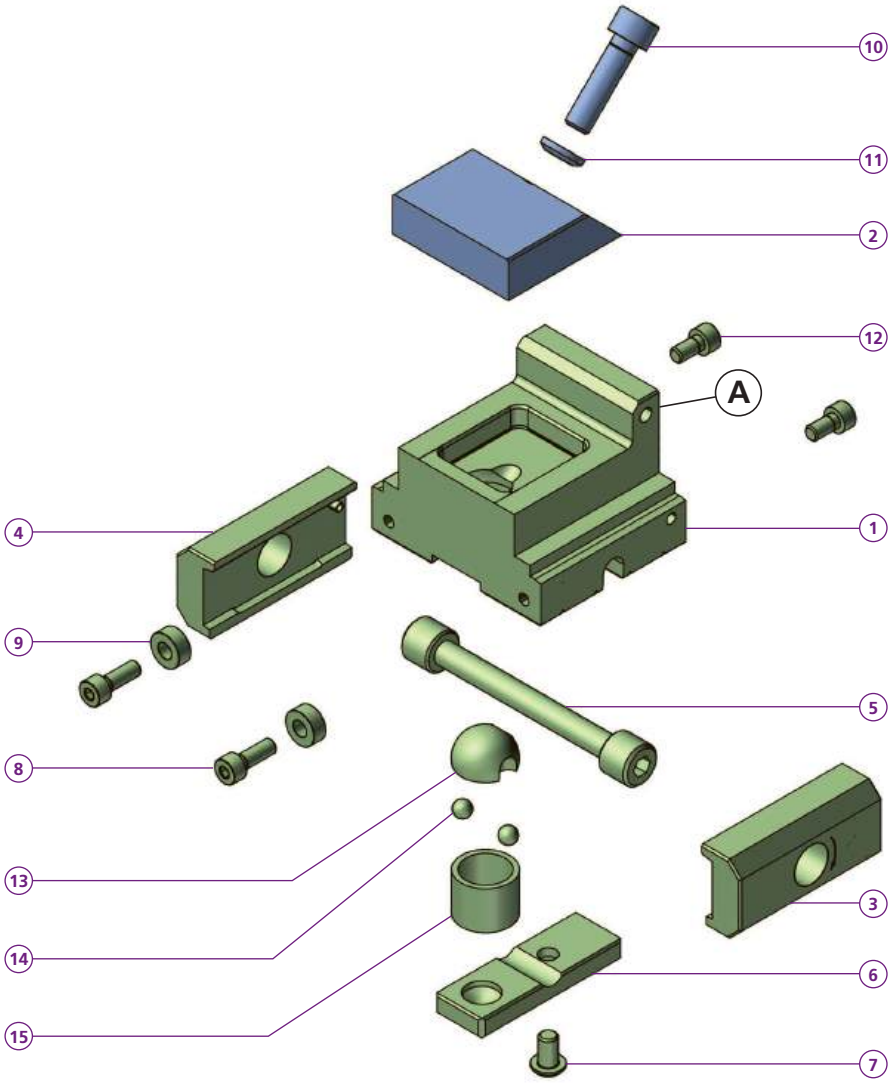
Tilattava erikseen











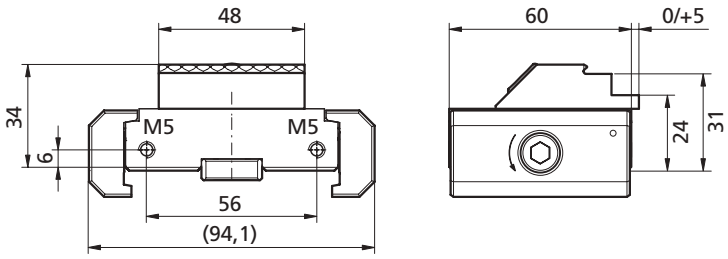
A		
45°	**PS5X48L49-105**	
1	1x	TF190651
9	2x	**PCD005**
8	2x	**M5X14ISO4762**
kg		~1,2
	PS1F48L49-105	
1	1x	TF140673
	PS1R48L49-105	
1	1x	TF140672
2	1x	sivu 84, 85
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2059**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M8X30ISO4762**
11	1x	PCUSR14
12	2x	**M5X10ISO4762**
13	1x	PCKMR45M8
14	2x	D=6 DIN 5401
15	1x	PCD20L15
kg		~1,3

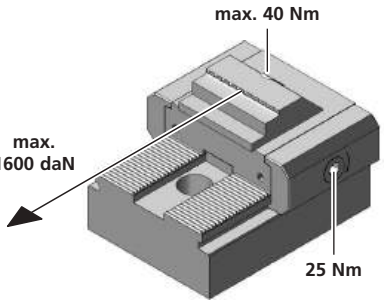
Tilausesimerkki: 1x **PS1F48L49-105** & 1x **B105**

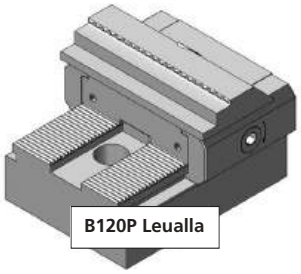
Kiristys momentti		Puristusvoima		
Nm	**(lb-ft)**	**~daN**	**~(lb)**	**~t**
10	7,4	= 400	880	0,4
20	14,8	= 800	1´760	0,8
30	22,2	= 1´200	2´650	1,2
40	29,6	= 1´600	3´530	1,6

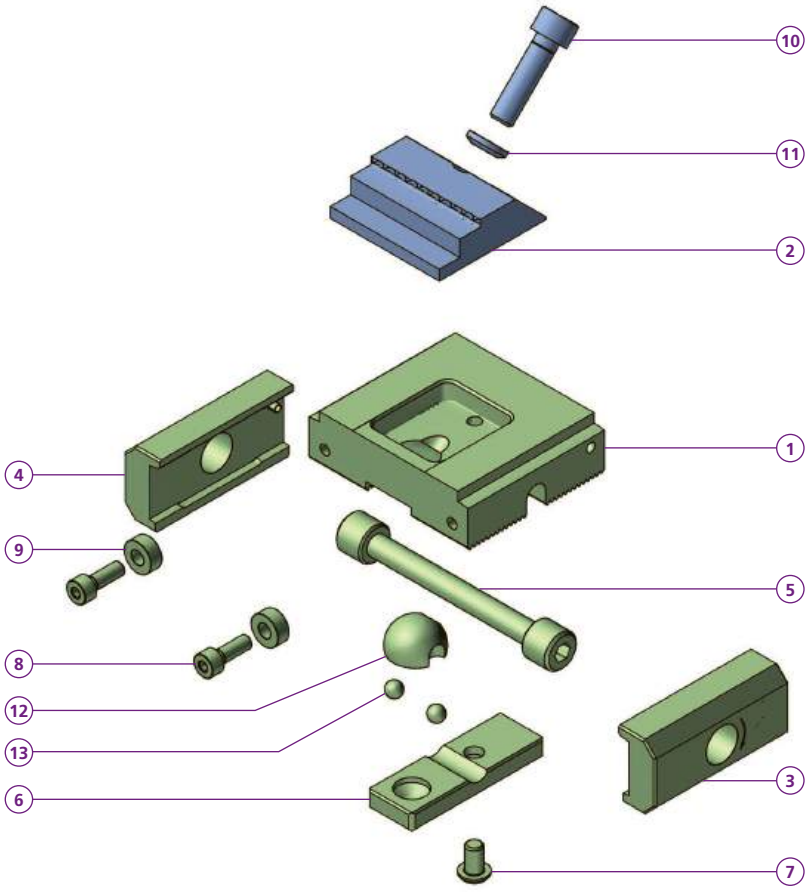
Tilattava erikseen

PS5X48L34-105







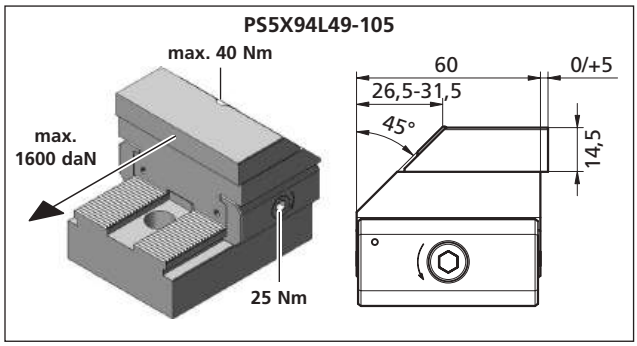


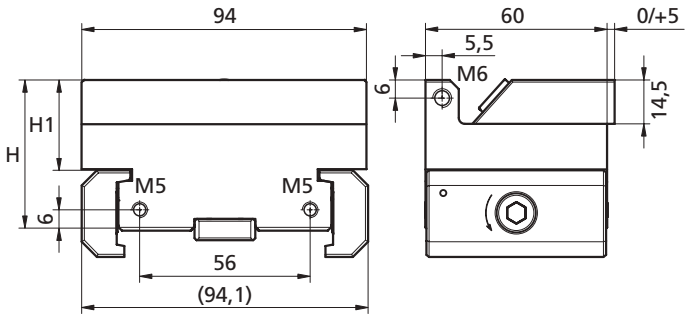
PS5X48L34-105		
1	1x	T00365
2	1x	sivu 84, 85
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2059**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M8X28ISO4762**
11	1x	PCUSR16
12	1x	PCKMR45M8
13	2x	D=6 DIN 5401
kg		~0,9

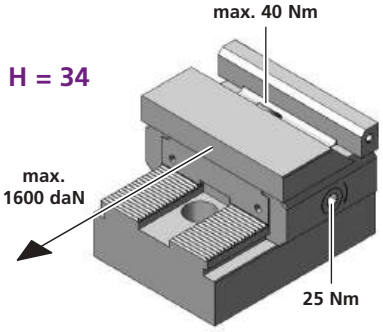
Tilausesimerkki: 1x PS5X48L34-105 & 1x B105

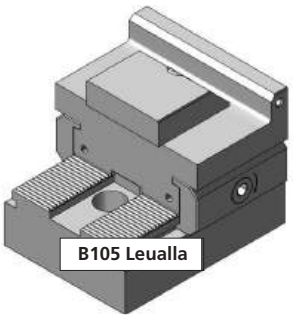
Kiristys momentti		Puristusvoima		
Nm	(lb-ft)	~daN	~(lb)	~t
10	7,4	= 400	880	0,4
20	14,8	= 800	1´760	0,8
30	22,2	= 1´200	2´650	1,2
40	29,6	= 1´600	3´530	1,6

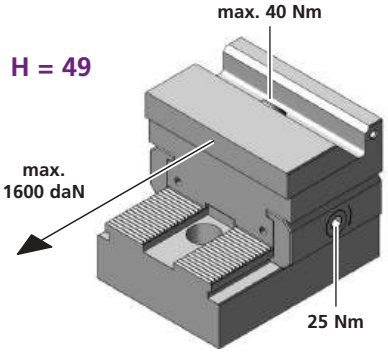
Tilattava erikseen

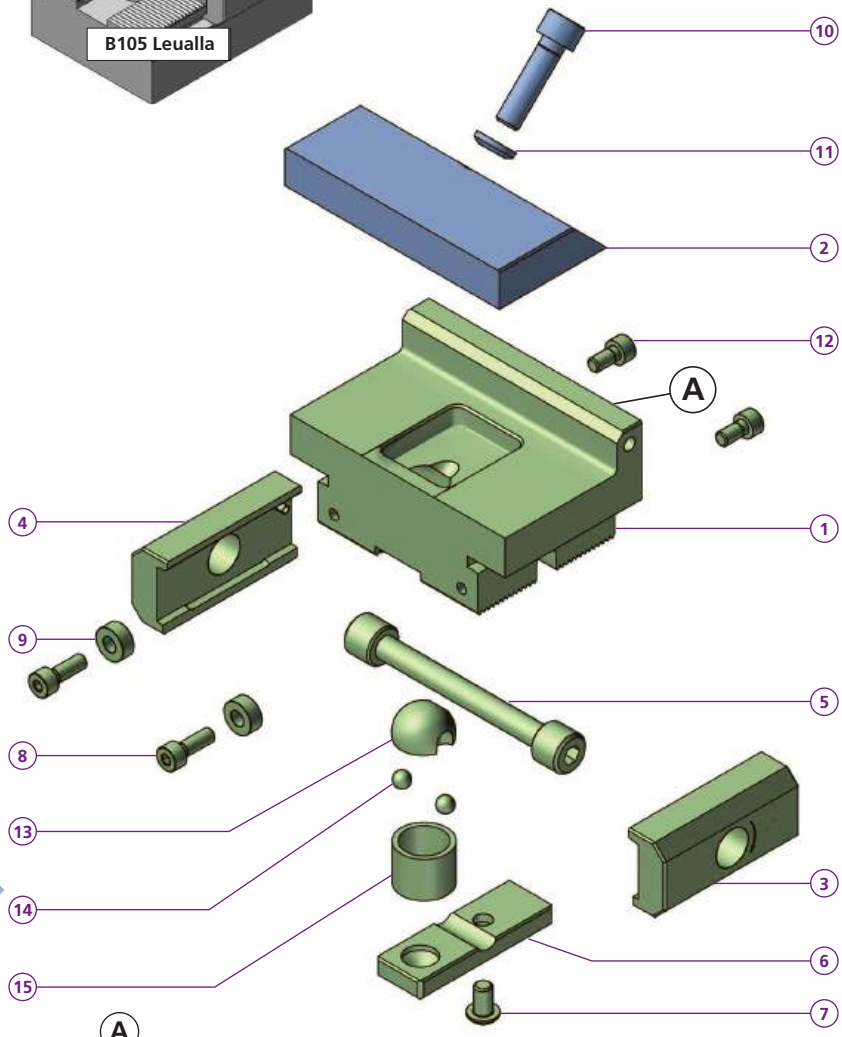












PS5X94L49-105

1	1x	TW100186
15	2x	PCD20L15
9	2x	**PCD005**
8	2x	**M5X14ISO4762**
kg		~1,5

PS1F94L34-105

1	1x	TH130785

PS1R94L34-105

1	1x	TH130786
2	1x	sivu 84, 85
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2059**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M8X30ISO4762**
11	1x	PCUSR14
12	2x	**M5X10ISO4762**
13	1x	PCKMR45M8
14	2x	D=6 DIN 5401
H	=	34
H1	=	15
kg		~1,0

PS1F94L49-105

1	1x	TF140674
15	2x	PCD20L15

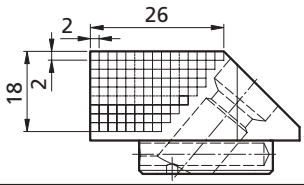
PS1R94L49-105

1	1x	TF140675
15	2x	PCD20L15
H	=	49
H1	=	30
kg		~1,7

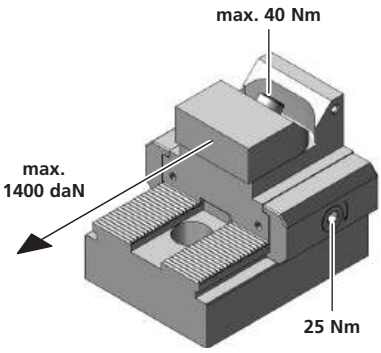
Tilausesimerkki: 1x **PS1R94L49-105** & 1x **B105**

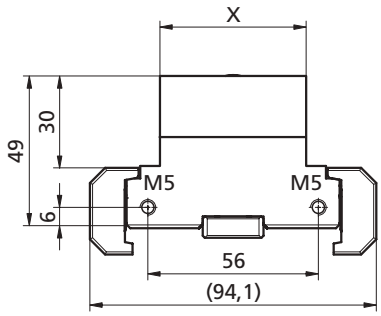
Kiristys momentti *Torque*		Pitovoima *Working holding force*		
Nm	**(lb-ft)**	**~daN**	**~(lb)**	**~t**
10	7,4	= 400	880	0,4
20	14,8	= 800	1´760	0,8
30	22,2	= 1´200	2´650	1,2
40	29,6	= 1´600	3´530	1,6

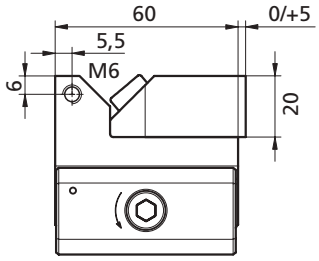
Tilattava erikseen

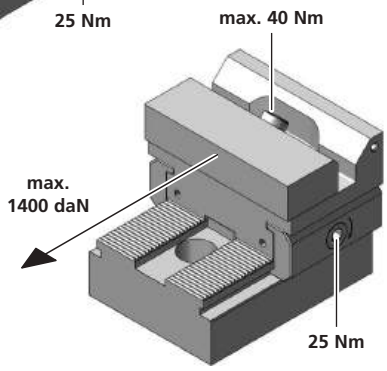


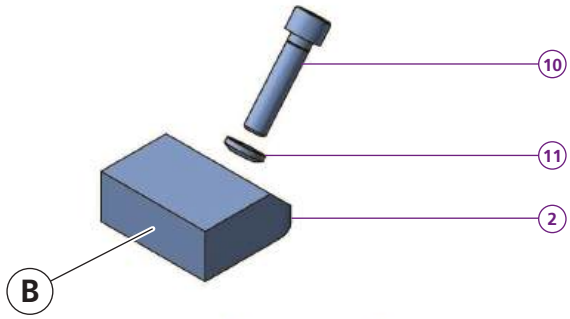
Muotoleuan koneistus:
Leikkauskuvannosta maksimi aineenpoiston mitat

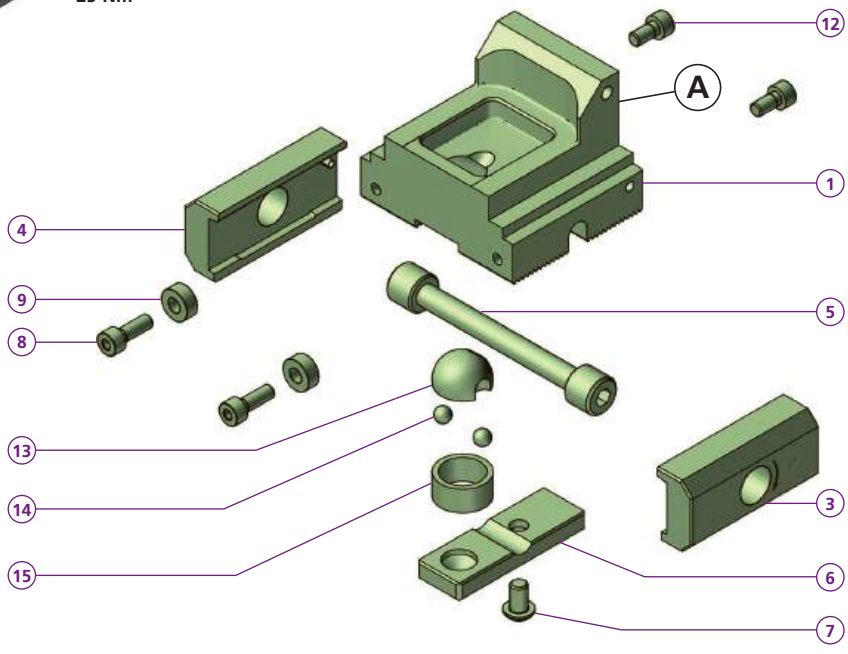












A

PS1R48L49-105H20

1	1x	TW100161-01
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2059**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M8X35ISO4762**
11	1x	PCUSR14
12	2x	**M5X10ISO4762**
13	1x	PCKMR45M8
14	2x	D=6 DIN 5401
15	1x	PCD20L095
X	=	48
kg		~1,2

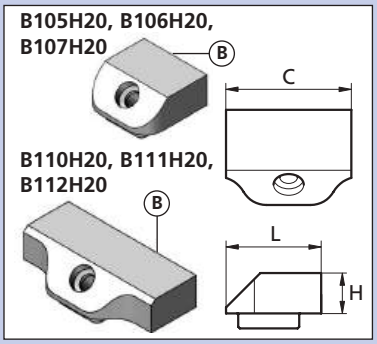
PS1R94L49-105H20

1	1x	TW100161-07
X	=	94
kg		~1,5

B

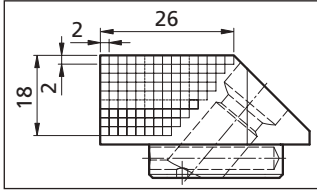
Tilausesimerkki: 1x PS1R48L49-105H20 & 1x B107H20

	B105H20	B106H20	B107H20	B110H20	B111H20	B112H20
C	48	48	48	94	94	94
H	20	20	20	20	20	20
L	47	47	47	47	47	47
i	HV700 x0,2mm	HV700 x0,2mm	*	HV700 x0,2mm	HV700 x0,2mm	*
kg	~0,38	~0,38	~0,38	~0,57	~0,56	~0,56

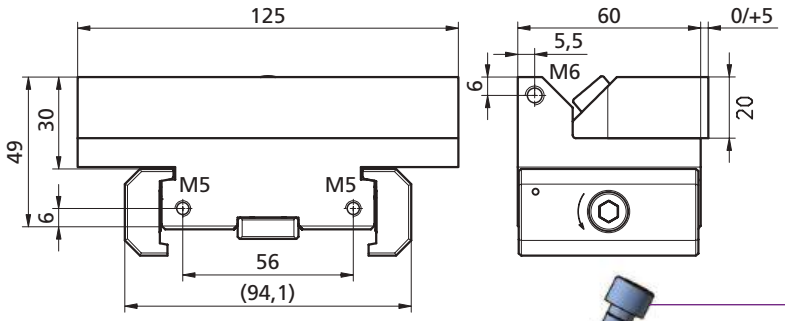


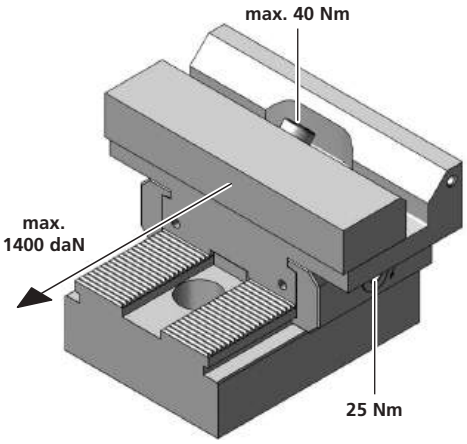
* = pehmeä teräsleuka

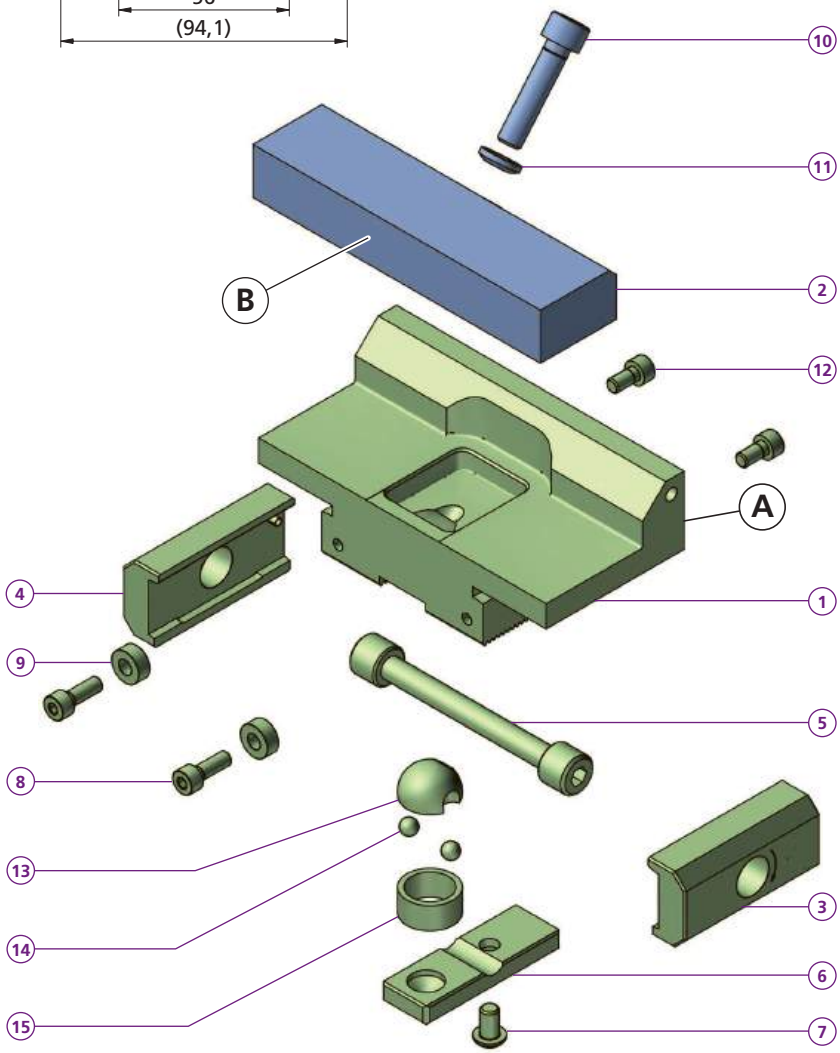
Tilattava erikseen



Muotoleuan koneistus:
Leikkauskuvannosta maksimi aineenpoiston mitat







PS1R125L49-105H20

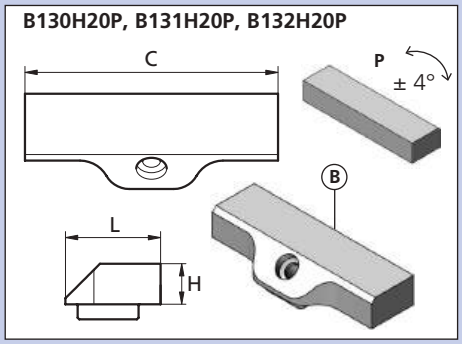
1	1x	TW110037
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2059**
7	1x	**M6X8ISO7380**
8	2x	**M5X14ISO4762**
9	2x	**PCD005**
10	1x	**M8X35ISO4762**
11	1x	PCUSR14
12	2x	**M5X10ISO4762**
13	1x	PCKMR45M8
14	2x	D=6 DIN 5401
15	1x	PCD20L095
kg		~1,7

PS1F125L49-105H20

1	1x	TH150895
X	=	125
kg		~1,7

Tilausesimerkki: 1x PS1R125L49-105H20 & 1x B132H20P

	B130H20P	B131H20P	B132H20P
C	125	125	125
H	20	20	20
L	47	47	47
i	HV700 x0,2mm	HV700 x0,2mm	*
kg	~0,71	~0,71	~0,71



* = pehmeä teräsleuka

Tilattava erikseen

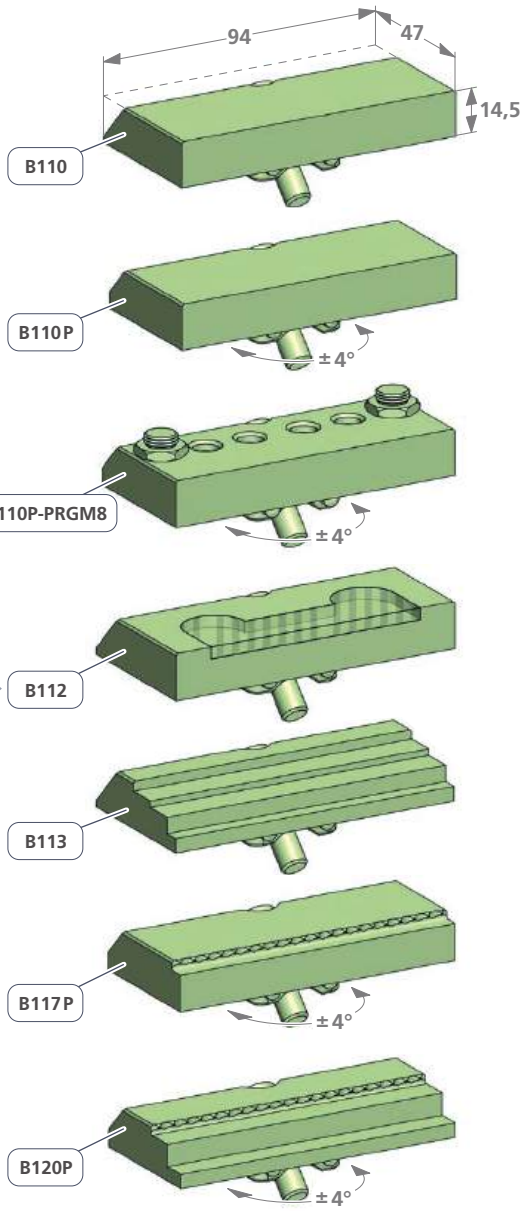
Käytettäväksi erilaisissa kiinnitystilanteissa

Tilauskoodi					kg
B110	HV700 x 0,2mm				~0,49
B110P	HV700 x 0,2mm	±4°			~0,49

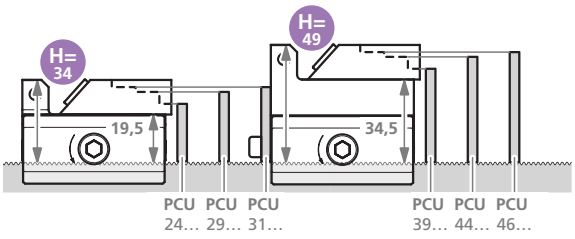
Uritetuilla elementeillä

Tilauskoodi					kg
B110P-PRGM8	HV700 x 0,2mm				~0,46

Tilauskoodi					kg
B111	HV700 x 0,2mm				~0,48
B111P	HV700 x 0,2mm	±4°			~0,48
B112	Pehmeä teräs (1.2312)				~0,49
B112P	Pehmeä teräs (1.2312)	±4°			~0,49
B112HG	Erittäin tarkka				~0,49
B112E	Pintakarkaistu teräs (1.5752)				~0,49
B112EP	Pintakarkaistu teräs (1.5752)	±4°			~0,47
B113	HV700 x 0,2mm				~0,39
B113P	HV700 x 0,2mm	±4°			~0,39
B117P	57HRC	±4°			~0,46
B120	57HRC				~0,4
B120P	57HRC	±4°			~0,4

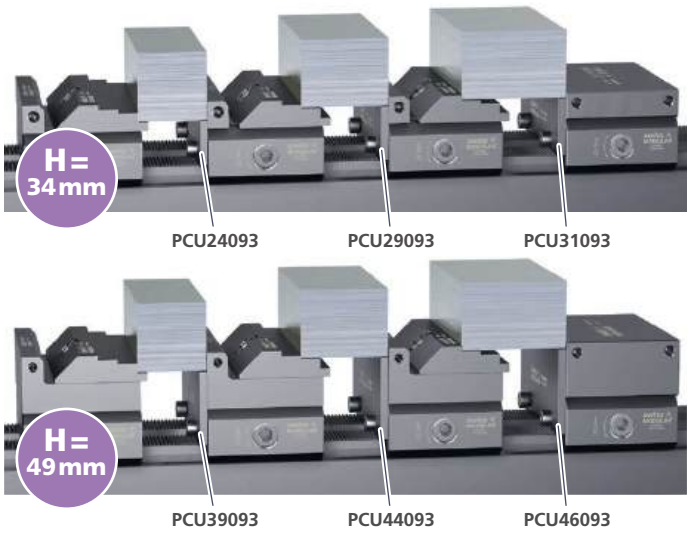


Moduulien korkeudet



Porrasleukoja käytettäessä on noudatettava oikeaa moduulin kiinnityskorkeutta 34 mm / 49 mm. Vastapuolella olevat työkappaleet tuetaan sopivan korkuisilla suuntaispaloilla.

Porrastetut leuat (B113)

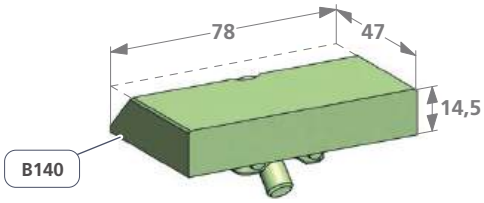


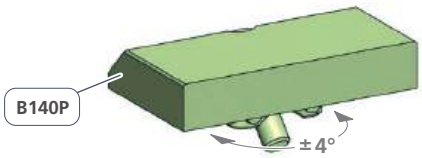
Käytettäväksi erilaisissa kiinnitystilanteissa

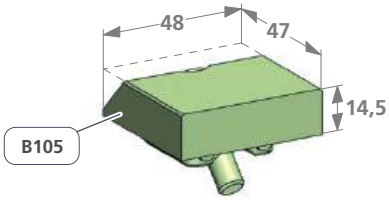
Tilauskoodi					kg
B140	HV700 x 0,2mm				~0,41
B140P	HV700 x 0,2mm	±4°			~0,41
B141	HV700 x 0,2mm				~0,41
B141P	HV700 x 0,2mm	±4°			~0,41
B105	HV700 x 0,2mm				~0,27
B105P	HV700 x 0,2mm	±4°			~0,27
B105-15	HV700 x 0,2mm				~0,27
B106	HV700 x 0,2mm				~0,27
B106P	HV700 x 0,2mm	±4°			~0,27
B107	pehmeäer Stahl *soft steel* (1.2312)				~0,27
B107P	pehmeäer Stahl *soft steel* (1.2312)	±4°			~0,27
B108	HV700 x 0,2mm				~0,22
B108P	HV700 x 0,2mm	±4°			~0,22
B115	57HRC				~0,21
B115P	57HRC	±4°			~0,21
B116P	57HRC	±4°			~0,25

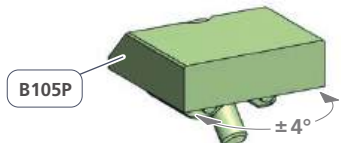
Hammastettuihin leukoihin

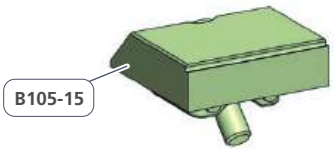
PF-SET	Jousikuormitettu mekanismi puristusvoiman ylläpitämiseksi



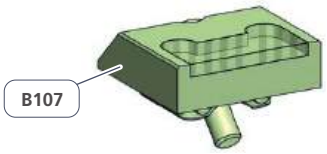


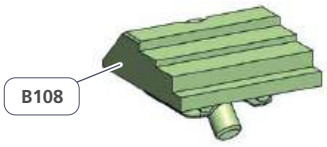


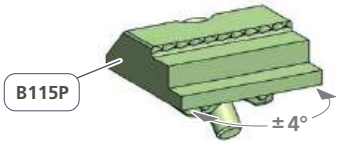


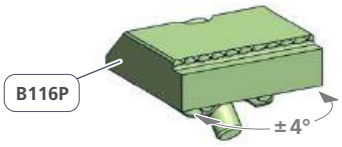


Pehmeä teräsleuka muotoleukojen koneistukseenaw.





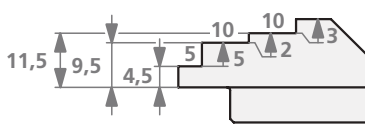




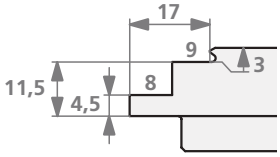
Kaikissa lineaarisissa leuoissa voidaan käyttää lautasjousia ruuvin alla ylläpitämään puristusvoimaa, jotta työkappale ei irtoa koneistuksen aikana

Lautasjouset on asennettava vastakkain, jotta ne toimivat oikein

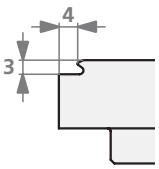
Porrastettujen leukojen yksityiskohtaiset mitat



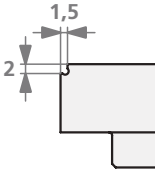
B108, B108P, B113, B113P



B115, B115P, B120, B120P



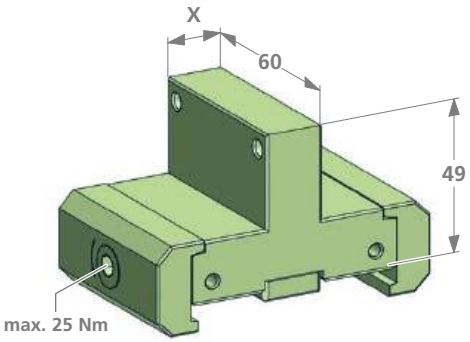
B116P, B117P



B105-15

Pystykara- ja vaakakarasovelluksiin

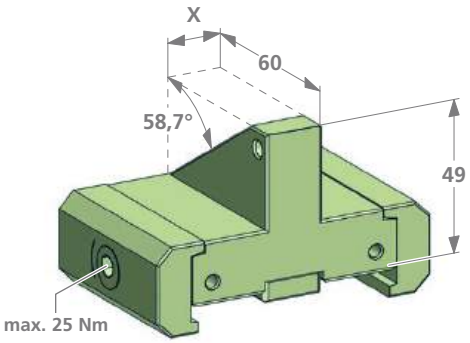
Tilauskoodi		kg
PAND19-49	~1,2	19
PAND26-49	~1,3	26
PAND34-49	~1,4	34



Kapeat pääty- ja kiinnitysmoduulit kapeiden työkappaleiden sarjakiinnityksessä

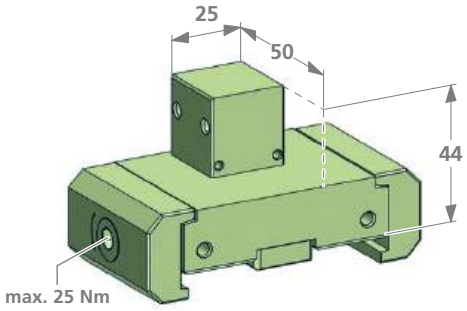
5-Akseliseen koneistukseen

Tilauskoodi		kg	X
PA5X19-49F	~1,1	19
PA5X19-49R	~1,1	19
PA5X26-49F	~1,1	26
PA5X26-49R	~1,1	26
PA5X34-49F	~1,2	34
PA5X34-49R	~1,2	34



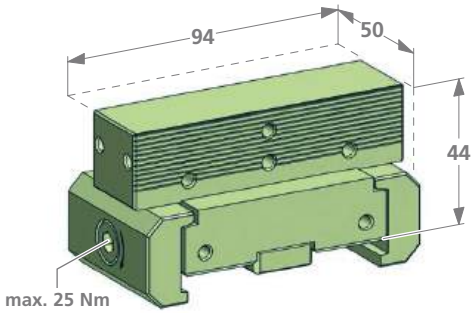
Pystykara- ja vaakakarasovelluksiin

Tilauskoodi		
PAND25-44		~0,9



Kapea ja lyhyt päätymoduuli pienille työkappaleille

Tilauskoodi		kg
PAND94-44		~1,3



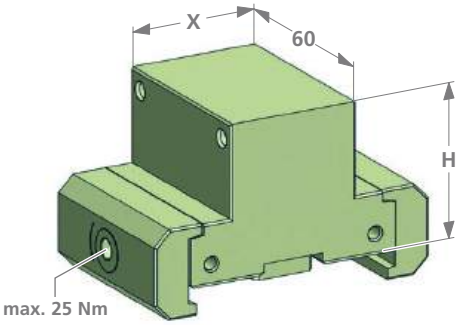
Päätymoduuli, jossa on kaksoiskiinnitystoiminto. Kaksinkertaistaa kiinnitysalueiden määrän samassa tilassa.

Päätypinnassa on kaksi kohdistusreikää. MS50-kohdistusruuveilla sivupysäytin voidaan sijoittaa tarkasti keskelle.

Skannaa tai klikkaa PDF STEP

Pystykara- ja vaakakarasovelluksiin

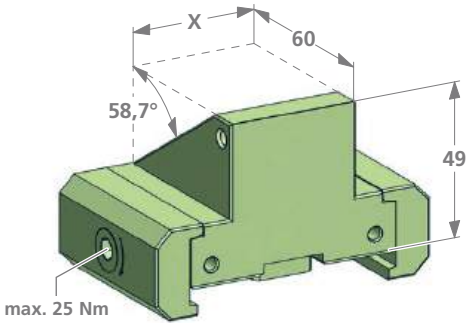
Tilauskoodi		kg	X
PAND43-49	~1,6	43	49
PAND48-34	~1,3	48	34
PAND48-49	~1,6	48	49
PAND48-75	~2,2	48	75
PAND58-34	~1,4	58	34
PAND58-49	~1,8	58	49
PAND61-34	~1,4	61	34
PAND68-34	~1,4	68	34



43–68 mm leveät päätymoduulit yksittäiskappale- tai useamman kappaleen sarjakiinnitykseen.

5-Akseliseen koneistukseen

Tilauskoodi		kg	X
PA5X43-49F	~1,3	43
PA5X43-49R	~1,3	43
PA5X48-49F	~1,4	48
PA5X48-49R	~1,4	48

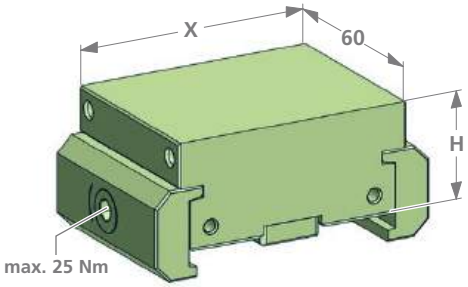


Moduuleita voidaan käyttää itsekeskittävissä puristimissa tai peruskiskoissa

Skannaa tai klikkaa PDF STEP

Pystykara- ja vaakakarasovelluksiin

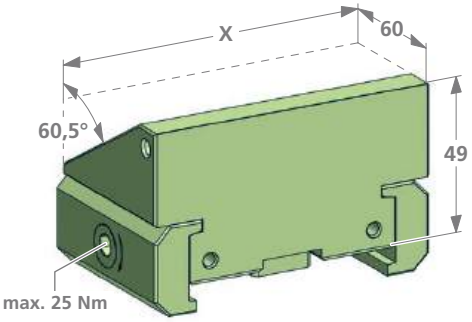
Tilauskoodi		kg	X
PAND78-34	~1,5	78	34
PAND78-49	~2,1	78	49
PAND94-34	~1,6	94	34
PAND94-49	~2,3	94	49
PAND125-49	~2,7	125	49



78-125mm leveät päätymoduulit yksittäiskappale- tai useamman kappaleen sarjakiinnitykseen.

5-Akseliseen koneistukseen

Tilauskoodi		kg	X
PA5X94-49F	~1,8	94
PA5X94-49R	~1,8	94
PA5X125-49F	~2,0	125
PA5X125-49R	~2,0	125



Moduuleita voidaan käyttää itsekeskittävissä puristimissa tai peruskiskoissa

Skannaa tai klikkaa PDF STEP

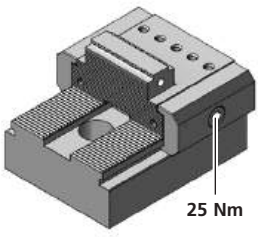
A B C

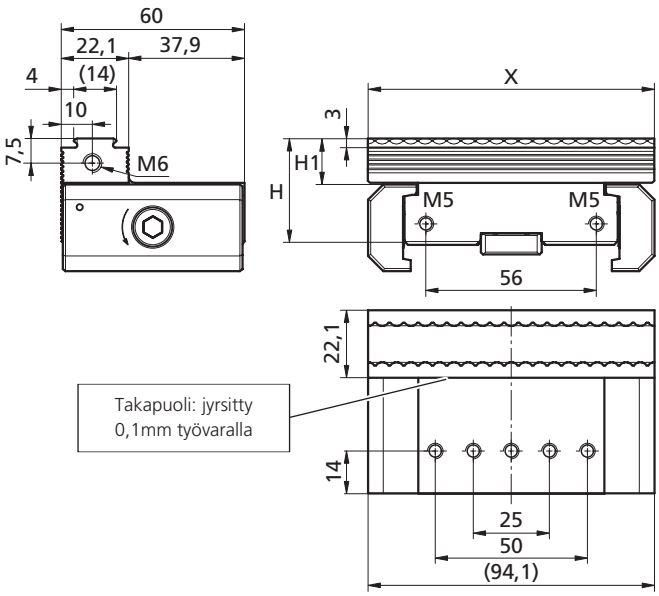
PAND48-34PRG-A1

1	1x	TH120684

PAND48-34PRF-A1

1	1x	TK140239
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
12	4x	**M5X10ISO4762**
X	=	48
H	=	34
H1	=	15
kg		~1,1



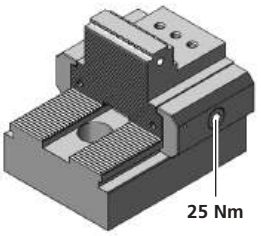


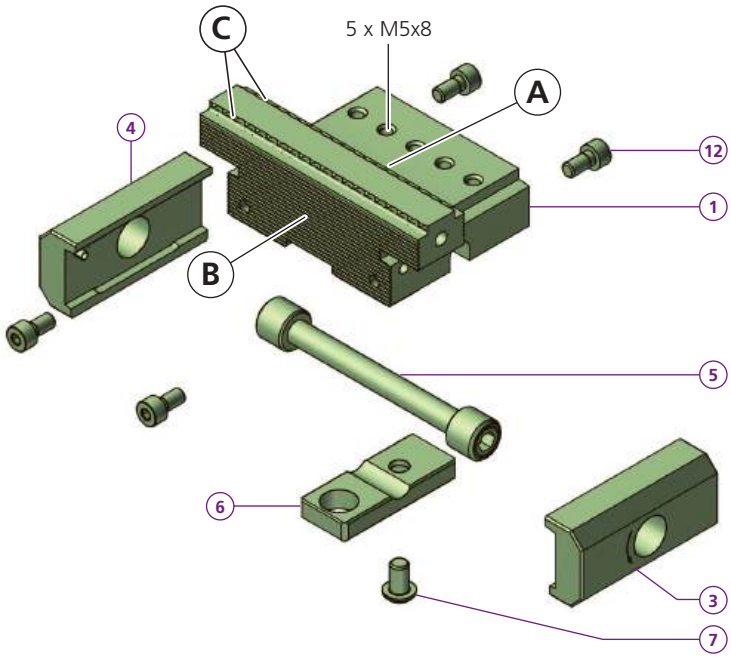
PAND48-49PRG-A1

1	1x	TH120685

PAND48-49PRF-A1

1	1x	TK140597
X	=	48
H	=	49
H1	=	30
kg		~1,3





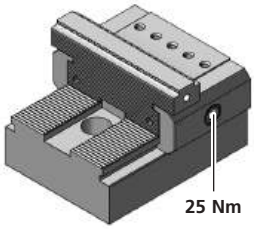
A B C

PAND94-34PRG-A1

1	1x	TH120686

PAND94-34PRF-A1

1	1x	TH140185
X	=	94
H	=	34
H1	=	15
kg		~1,2

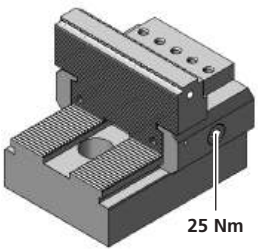


PAND94-49PRG-A1

1	1x	TH120687

PAND94-49PRF-A1

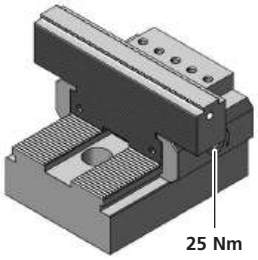
1	1x	TH130754
X	=	94
H	=	49
H1	=	30
kg		~1,6



A B C

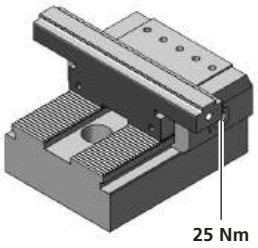
PAND125-49PRG-A1

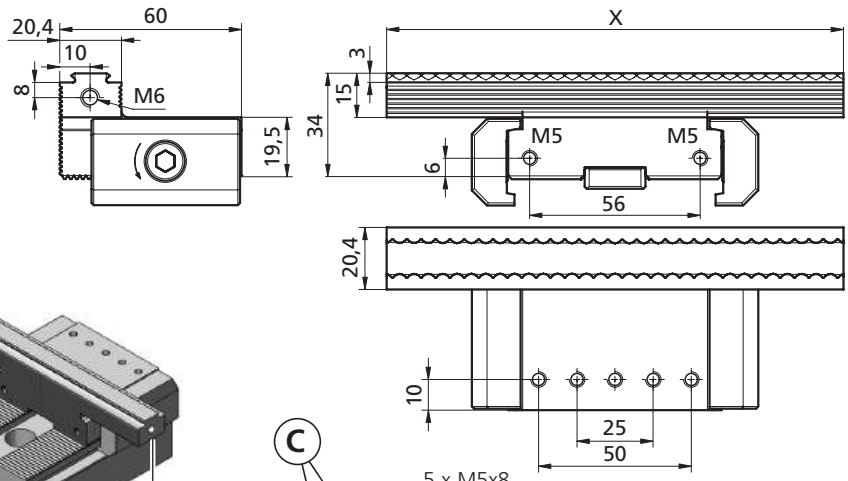
1	1x	TB160295
X	=	125
H	=	49
H1	=	30
kg		~1,7



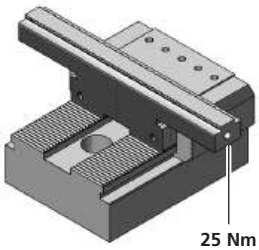
Tilausesimerkki: PAND94-34PRG-A1

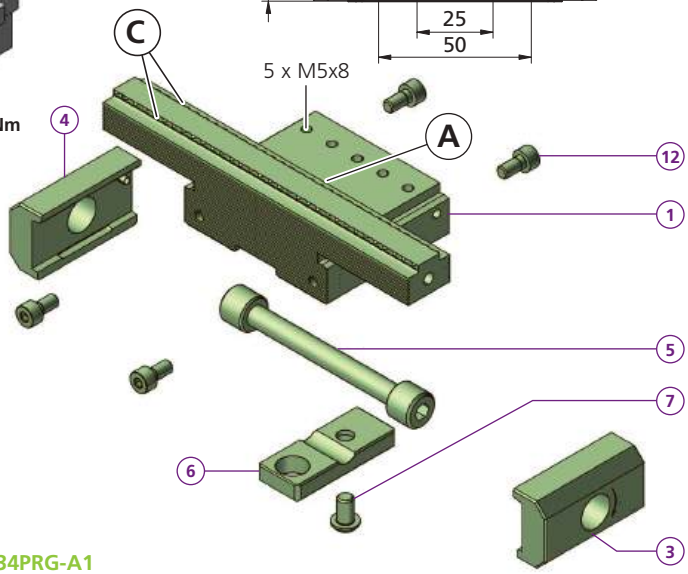
X = 125





X = 150

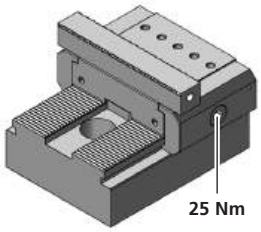


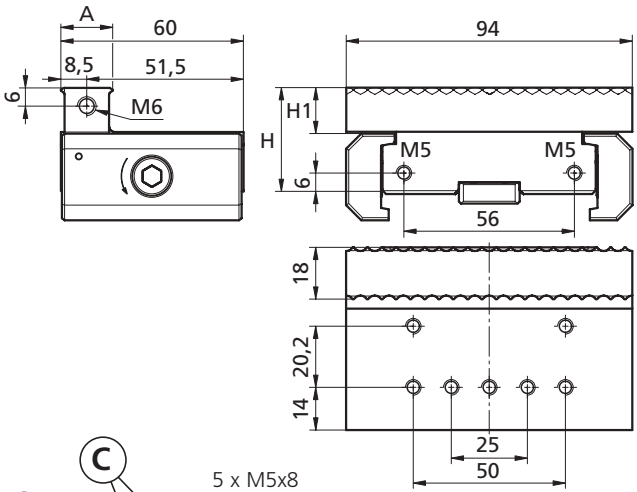


	A	B	C
PAND125-34PRG-A1			
1	1x	TB180899	
X	=	125	
kg		~1,2	
PAND150-34PRG-A1			
1	1x	TB160145	
3	1x	**PCSP50R**	
4	1x	**PCSP50L**	
5	1x	**PCS14**	
6	1x	**PCGU2049**	
7	1x	**M6X8ISO7380**	
12	4x	**M5X10ISO4762**	
X	=	150	
kg		~1,2	

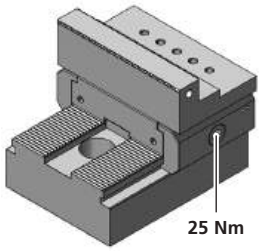
Tilausesimerkki: PAND150-34PRG-A1

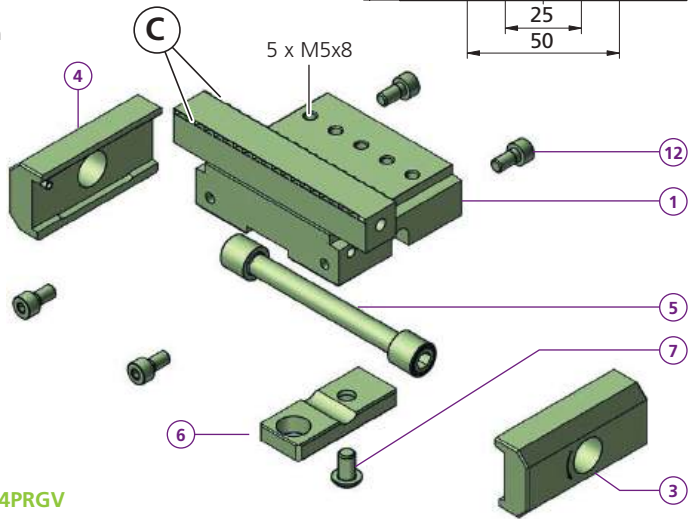
H = 34





H = 49



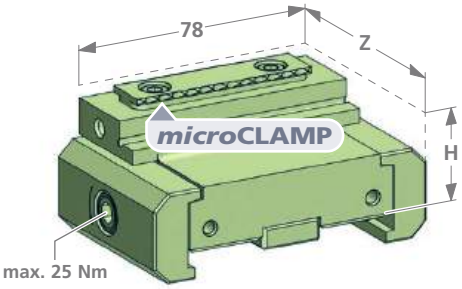


	C
PAND94-34PRGV	
1	1x TH171180
3	1x **PCSP60R**
4	1x **PCSP60L**
5	1x **PCS14**
6	1x **PCGU2049**
7	1x **M6X8ISO7380**
12	4x **M5X10ISO4762**
H	= 34
H1	= 15
A	= 17,5
kg	~1,2
PAND94-49PRGV	
1	1x TH171179
H	= 49
H1	= 30
A	= 17
kg	~1,6

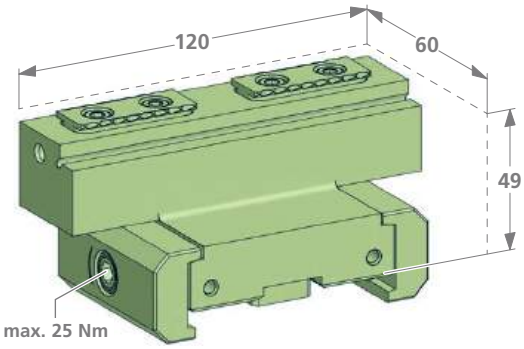
Tilausesimerkki: PAND94-34PRGV

Pystykara- ja vaakakarasovelluksiin

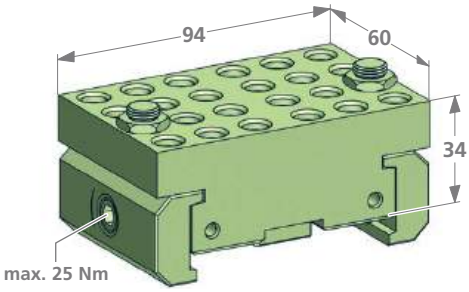
Tilauskoodi	kg	Z	H
PAND78-34UPRG	~1,2	60	34
PAND78-49UPRG	~1,5	60	49
PAND78-34X50UPRG	~1,0	50	34



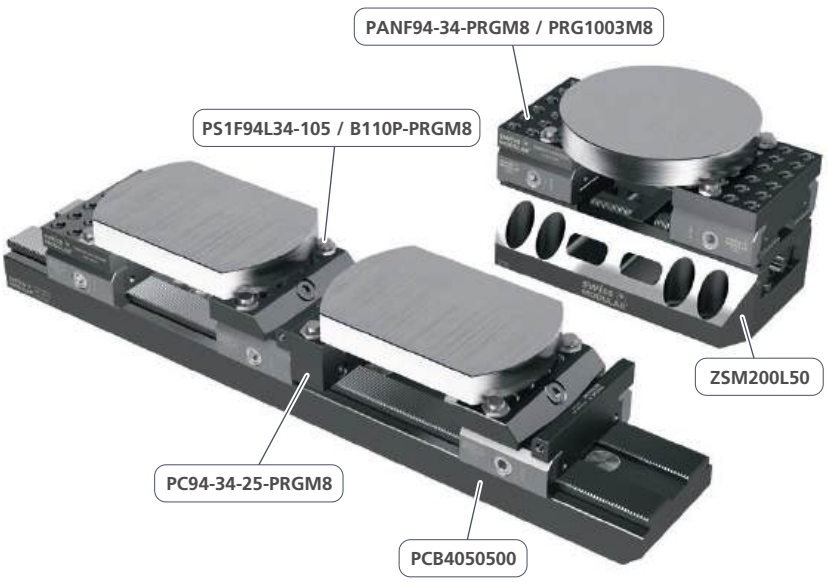
Tilauskoodi	kg
PAND120-49UPRG	~1,8



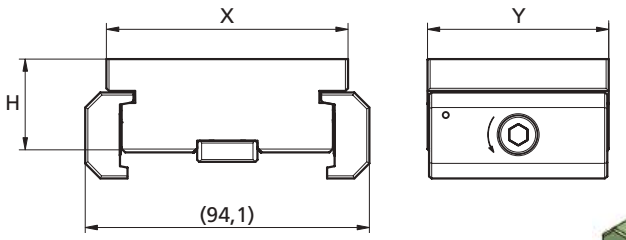
Tilauskoodi	kg
PANF94-34PRGM8	~1,5

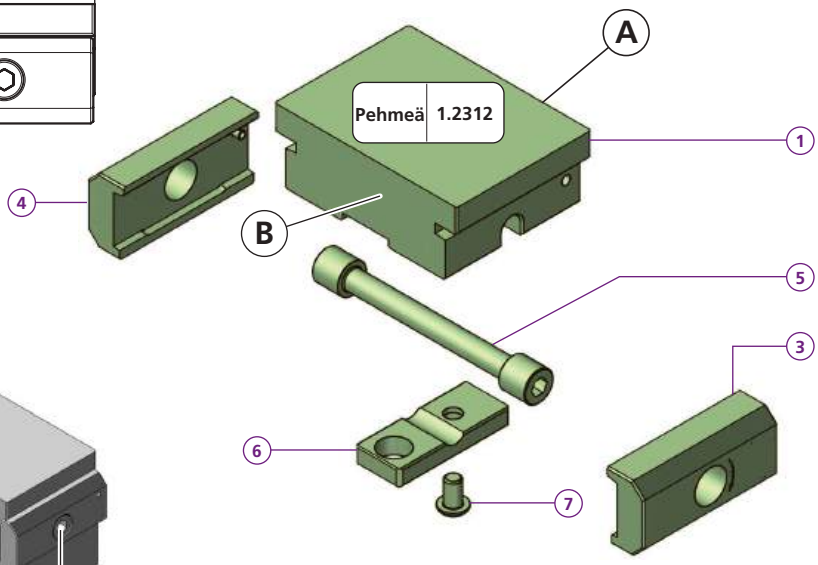


Näiden kiinnitysmoduulien käyttö laajentaa merkittävästi pyöreiden ja epäsäännöllisen muotoisten työkappaleiden kiinnitysmahdollisuuksia.



Kiinnipysyvyyden kannalta suorat hammastetut leuat ovat ihanteellinen valinta työkappaleiden kiinnittämiseen

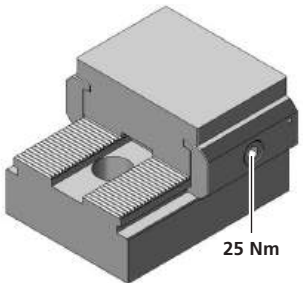




A B

PT-F80-30X60

1	1x	TF140637
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
X	=	80
H	=	30
Y	=	60
kg		~1,4

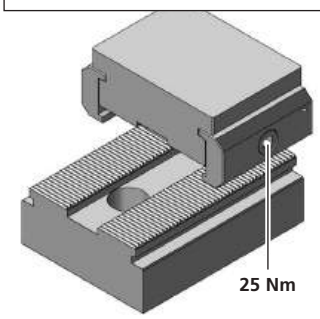


A B

PT-F80-30X60NS

1	1x	TF140635
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
X	=	80
H	=	30
Y	=	60
kg		~1,4

NS = Hammastamatton aihiomoduuli voidaan asemoida peruskiskoon portaattomasti

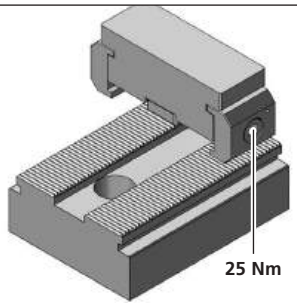


A B

PT-F80-30X30NS

1	1x	TF140749
3	1x	**PCSP30R**
4	1x	**PCSP30L**
5	1x	**PCS14**
6	1x	**PCGU2030**
7	1x	**M6X8ISO7380**
X	=	80
H	=	30
Y	=	30
kg		~0,7

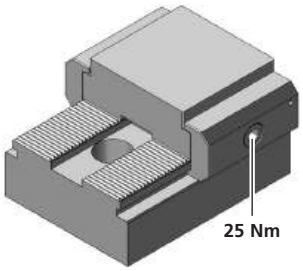
NS = Hammastamatton aihiomoduuli voidaan asemoida peruskiskoon portaattomasti



A B

PT-F61-25X60

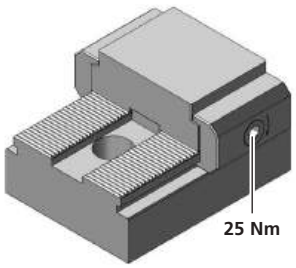
1	1x	TF140638
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
X	=	61
H	=	25
Y	=	60
kg		~1,1



A B

PT-F61-25X50

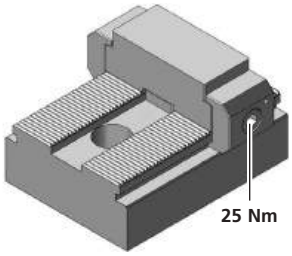
1	1x	TF140750
3	1x	**PCSP50R**
4	1x	**PCSP50L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
X	=	61
H	=	25
Y	=	50
kg		~1,0



A B

PT-F61-25X30

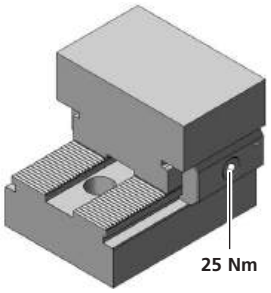
1	1x	TF140636
3	1x	**PCSP30R**
4	1x	**PCSP30L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
X	=	61
H	=	25
Y	=	30
kg		~0,6

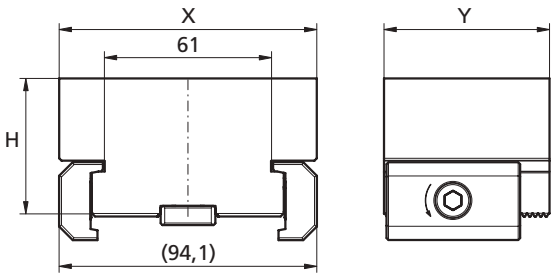


Tilausesimerkki: PT-F80-30X60

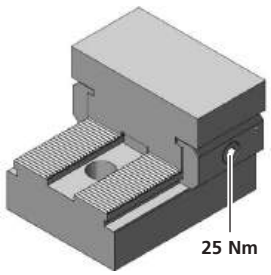
A B C

PR94-49SET
1 1x PR94-49
3 1x PCSP50R
4 1x PCSP50L
5 1x PCS14
6 1x PCGU2049
7 1x M6X8ISO7380
X = 94
H = 49
Y = 60,4
kg ~2,3

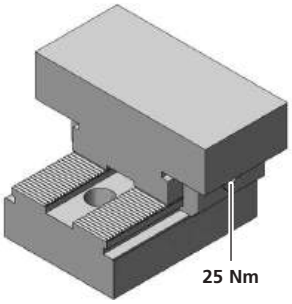




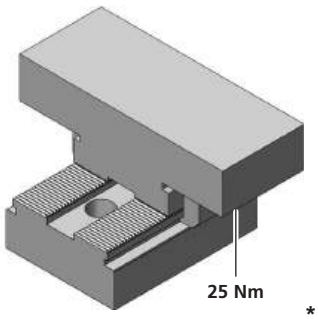
PR94-39-50SET
1 1x PR94-39-50
X = 94
H = 39
Y = 50,4
kg ~1,6



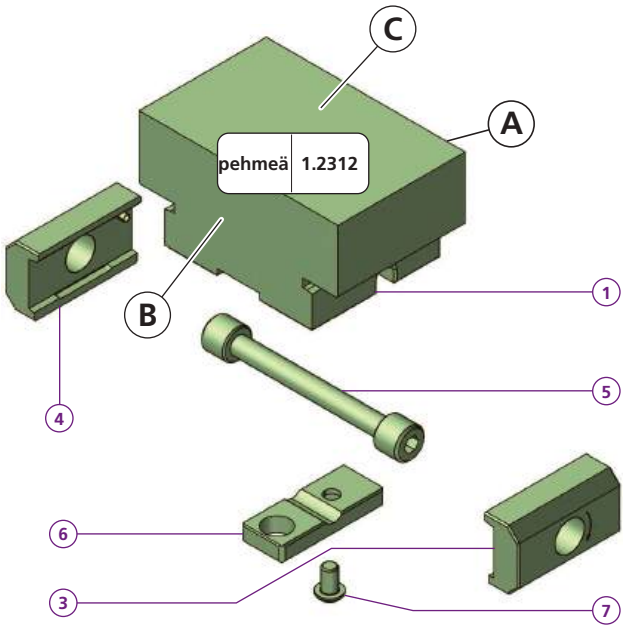
PR125-49SET
1 1x PR125-49
X = 125
H = 49
Y = 60,4
kg ~2,7



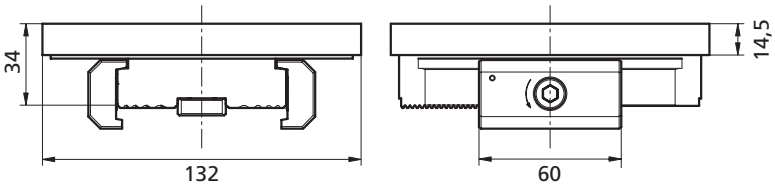
PR125-49SETALU
1 1x *PR125-49ALU
X = 125
H = 49
Y = 60,4
kg ~0,83



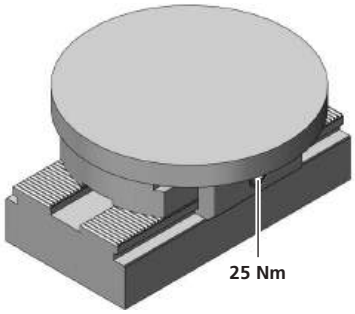
PR150-49SET
1 1x PR150-49
X = 150
H = 49
Y = 60,4
kg ~3,1

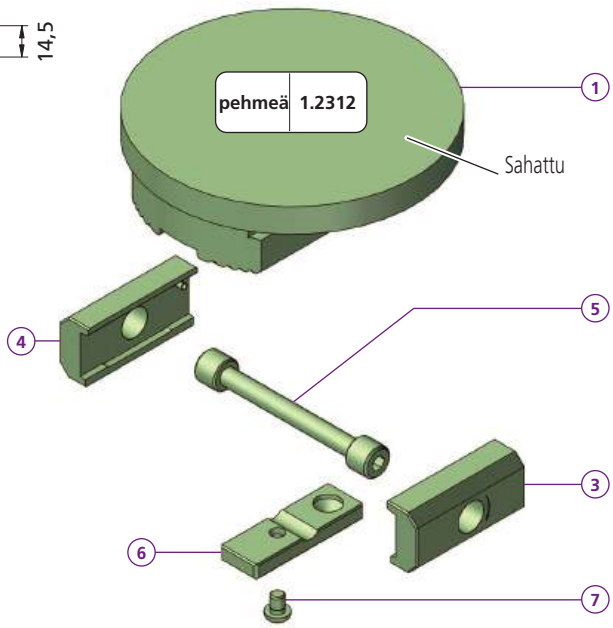


* ALU = ENAW-7022 Tilausesimerkki: PR94-49SET

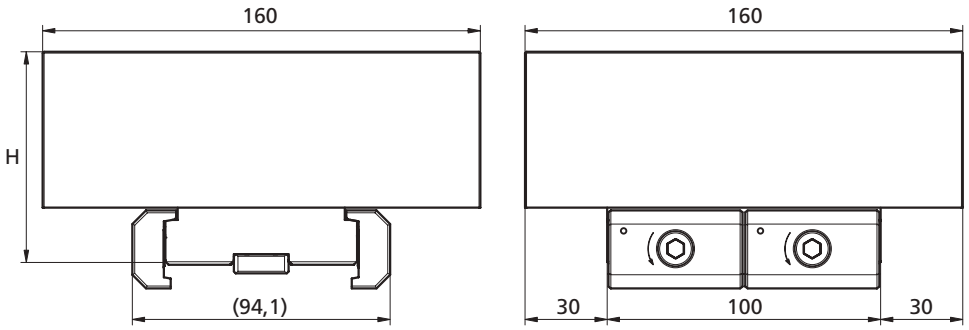


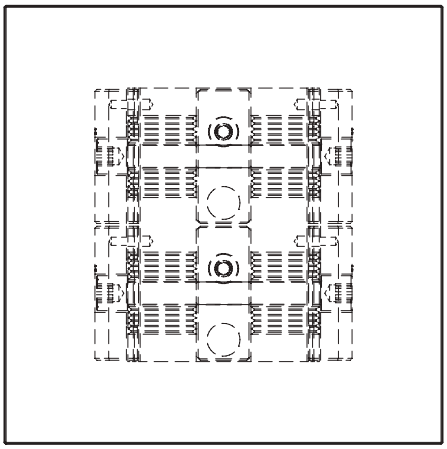
PT-F132-34RDSET
1 1x PT-F132-34RD
3 1x PCSP60R
4 1x PCSP60L
5 1x PCS14
6 1x PCGU2059
7 1x M6X8ISO7380
kg ~3,1

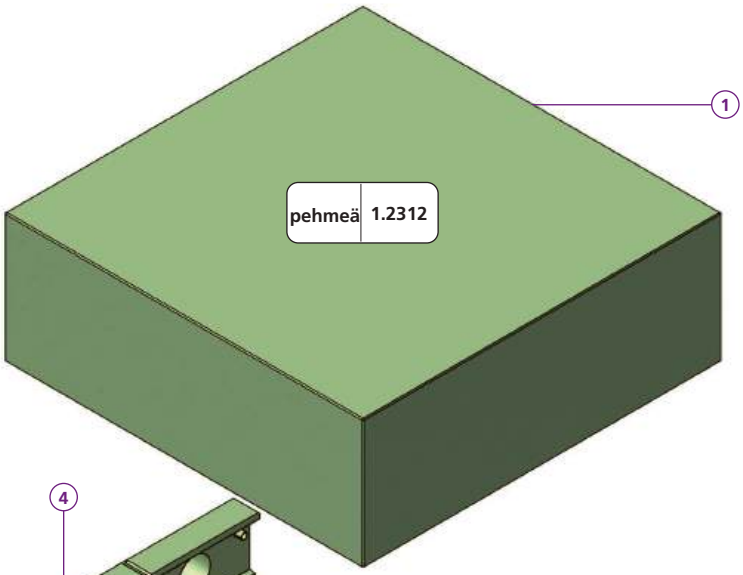


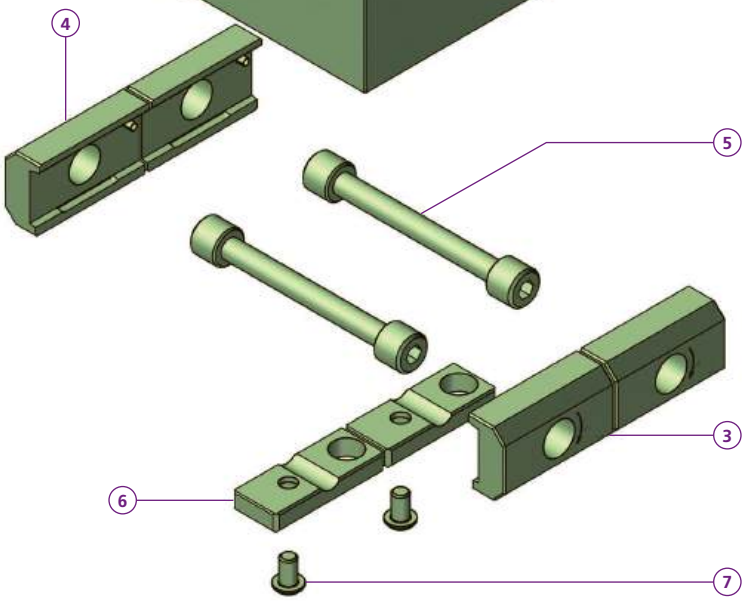


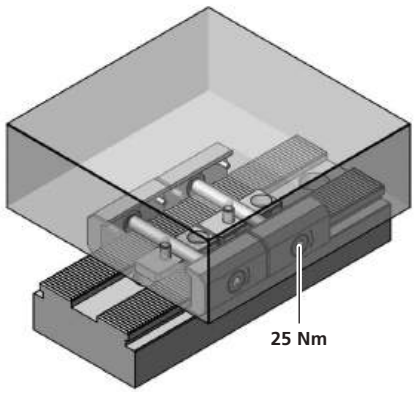
Tilausesimerkki: PT-F132-34RDSET





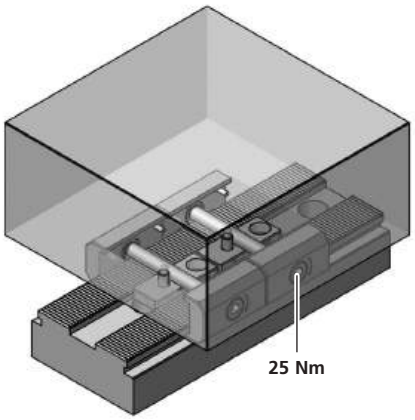




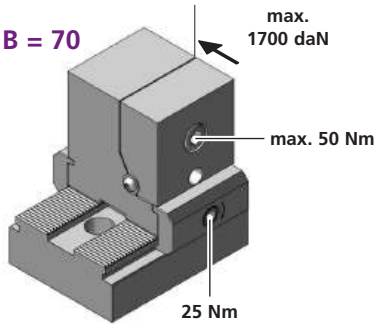


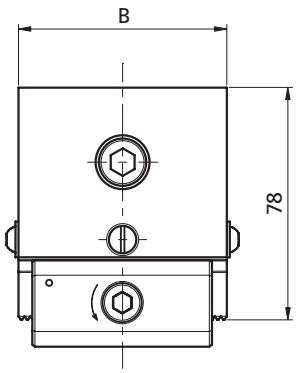
PTX160-57S		
1	1x	TH130539
3	2x	**PCSP50R**
4	2x	**PCSP50L**
5	2x	**PCS14**
6	2x	**PCGU2049**
7	2x	**M6X8ISO7380**
H	=	57
kg		~9

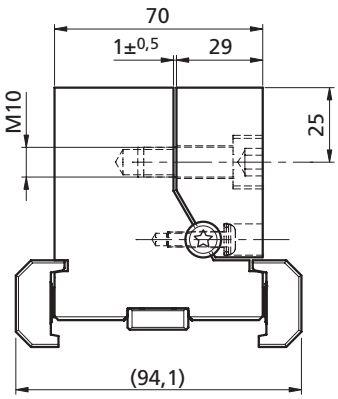
PTX160-77S		
1	1x	TH130723
H	=	77
kg		~13

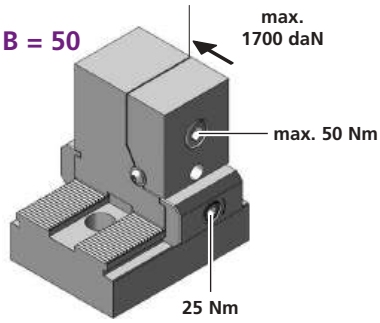


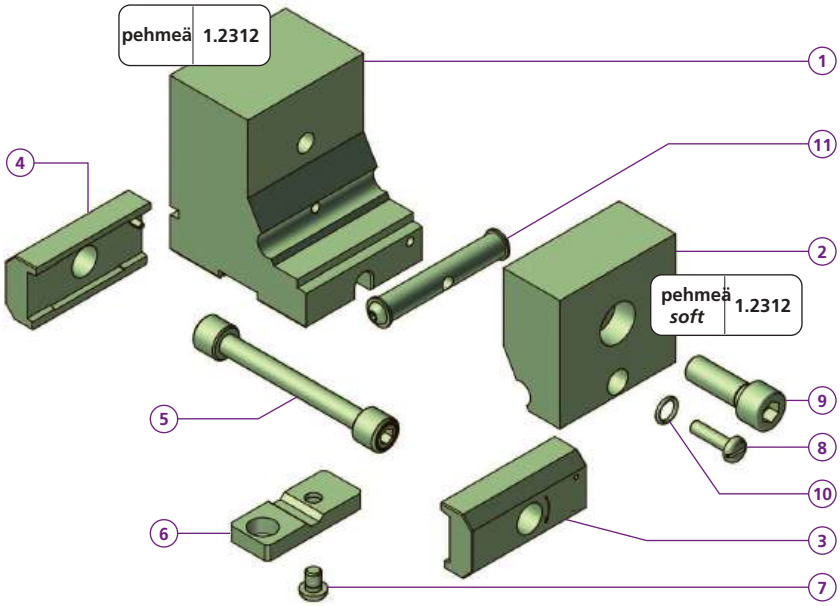
Tilausesimerkki: PTX160-57S









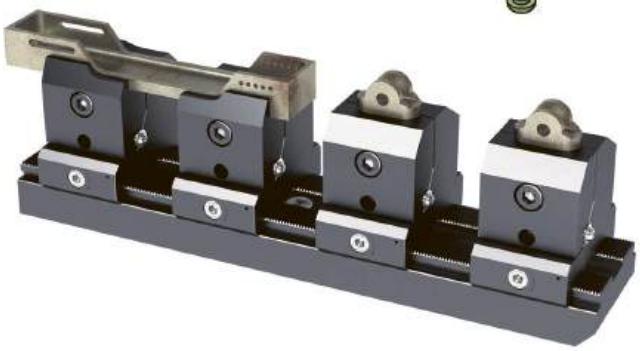


PS1X70L78ST		
1	1x	PRS7078AST
2	1x	PRS7078SST
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	1x	M5X20BN1362
9	1x	M10X30ISO4762
10	1x	OR Ø 8x1,5
11	1x	PRS7078G
B	=	70
kg		~3,2

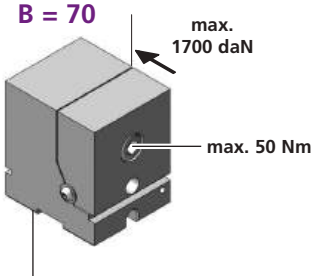
PS1X50L78ST		
1	1x	PRS5078AST
2	1x	PRS5078SST
3	1x	**PCSP50R**
4	1x	**PCSP50L**
11	1x	PRS5078G
B	=	50
kg		~2,3

PRS70L78ST		
1	1x	PRS7078AST
2	1x	PRS7078SST
11	1x	PRS7078G
B	=	70
kg		~2,8

PRS50L78ST		
1	1x	PRS5078AST
2	1x	PRS5078SST
11	1x	PRS5078G
B	=	50
kg		~2,0



Kiristys momentti		Puristusvoima		
Nm	(lb-ft)	~daN	~(lb)	~t
10	7,4	= 400	880	0,4
20	14,8	= 800	1´760	0,8
30	22,2	= 1´200	2´650	1,2
40	29,6	= 1´600	3´530	1,6



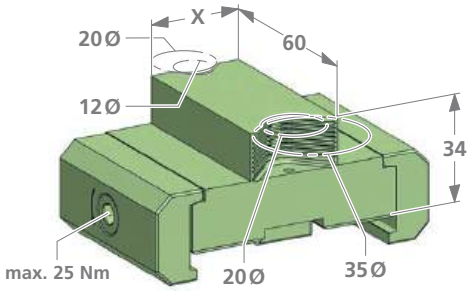
PRS = Aihiomoduuli ilman sivukiinnikkeitä

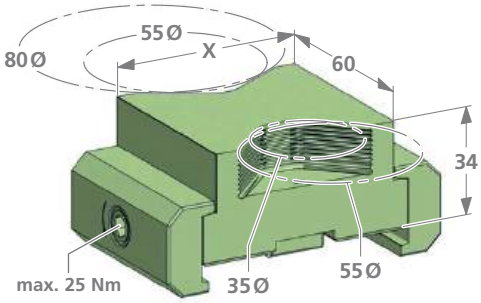
Asiakkaan tarpeisiin valmistettu muotoleukakiinnitin aihiosta

Tilausesimerkki: PS1X70L78ST

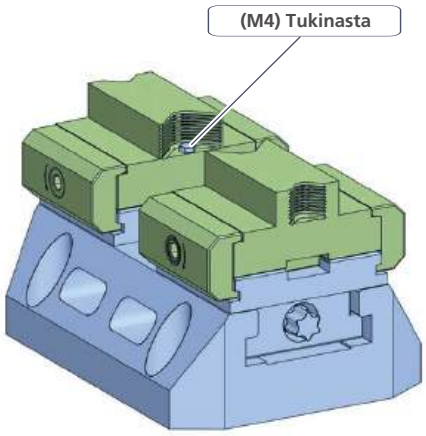
Päätymoduuli pyöreille työkappaleille

Tilauskoodi		Ø	X	kg
PAND30-34RV12-35		12 – 35	30	~1,1
PAND61-34RV35-80		35 – 80	61	~1,26





Pyöreitä työkappaleita joiden halkaisija on 12 - 80mm voidaan kiinnittää usealla eri tavalla



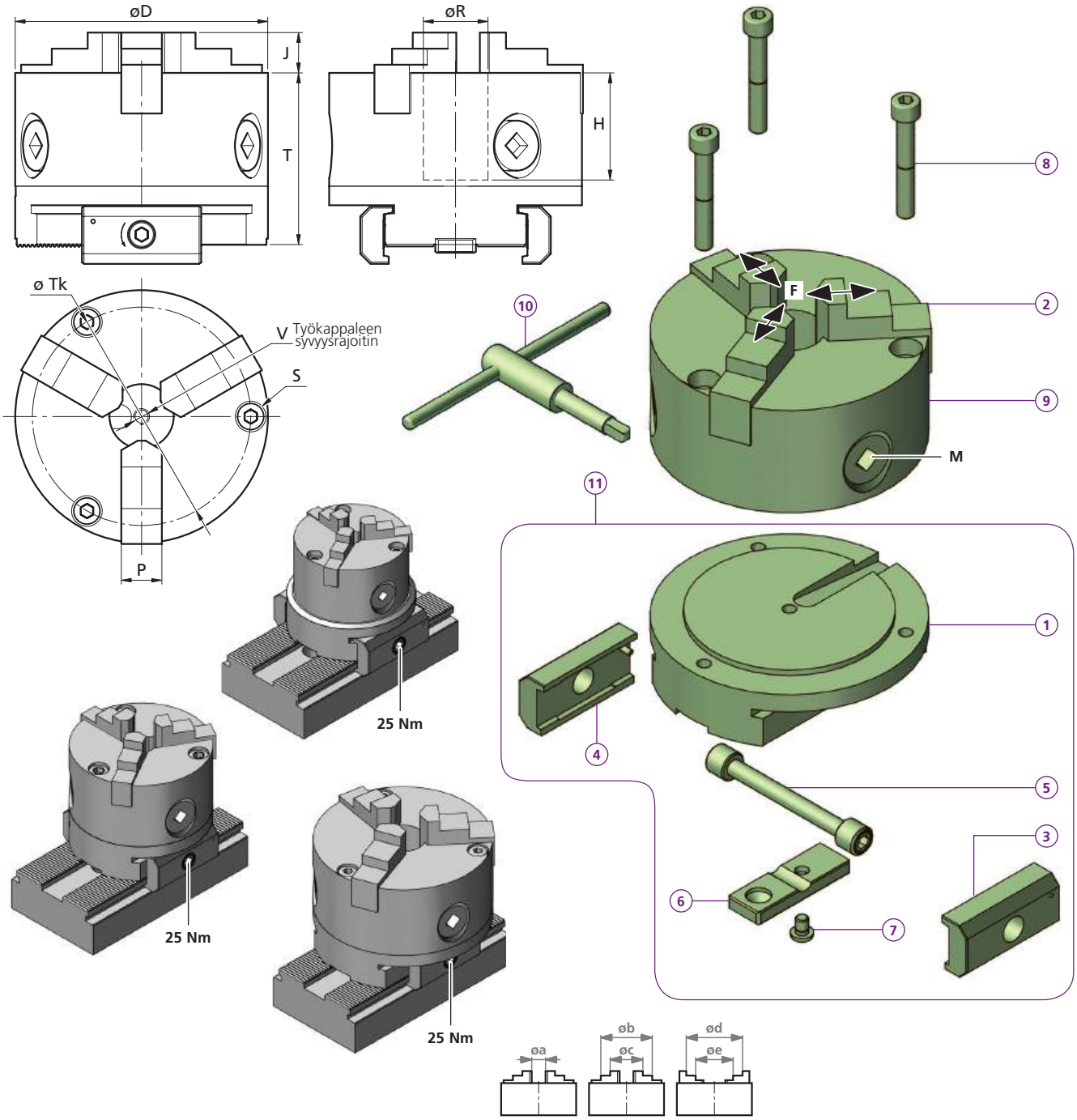
Kiristys momentti		Puristusvoima		
Nm	(lb-ft)	~daN	~(lb)	~t
10	7,4	= 200	440	0,2
20	14,8	= 500	1´102	0,5
30	22,2	= 1´000	2´204	1,0
40	29,6	= 1´300	2´866	1,3
50	37,0	= 1´600	3´527	1,6

NUSS3/8“TX30E14

HUOM!

Hylsy tilattava erikseen

Skannaa tai klikkaa PDF STEP



	D	J	T	R	H	P	V	a mm	b mm	c mm	d mm	e mm	M (max.)	F (max.)	ø Tk	S
PS3X80L75BSET	80	13	75	15	42,5	10	M6	3…27	48…73	23…48	52…76	27…51	28 Nm	1300 daN	67	M6
PS3X100L82BSET	100	17	82	20	49,5	14	M8	3…39	58…94	24…60	64…100	30…66	38 Nm	1600 daN	83	M8
PS3X125L87BSET	125	19	87	32	55	16	M8	3…49	70…116	30…75	83…125	38…84	55 Nm	2600 daN	108	M8

PS3X80L75BSET	
1	1x TW090013_01
2	2x 3 Stk. / *pcs*
3	1x **PCSP60R**
4	1x **PCSP60L**
5	1x **PCS14**
6	1x **PCGU2059**
7	1x **M6X8ISO7380**
8	3x **M6X45ISO4762**
9	1x 243809.0083220
10	1x 243864.0080000
11	**PTX80-30**
kg	~2,8

PS3X100L82BSET	
1	1x TW090012_01
2	2x 3 Stk. / *pcs*
8	3x **M8X50ISO4762**
9	1x 243809.0103220
10	1x 243864.0100000
11	**PTX100-30**
kg	~4,3

PS3X125L87BSET	
1	1x TW080027_01
2	2x 3 Stk. / *pcs*
8	3x **M8X55ISO4762**
9	1x 243809.0123220
10	1x 243864.0120000
11	**PTX125-29**
kg	~6,3

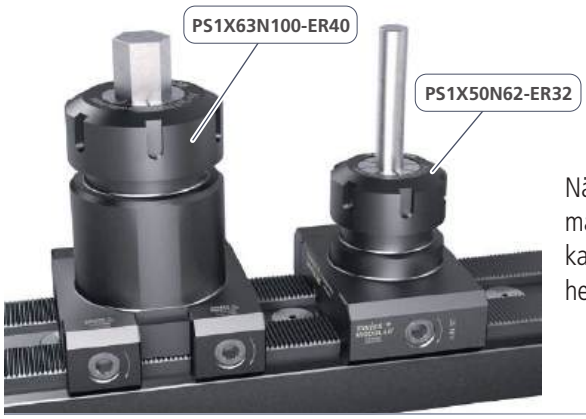
Ø			
80	243849.0083200	243850.0083200	***243834.0083300**
100	243849.0103200	243850.0103200	***243834.0103300**
125	243849.0123200	243850.0123200	***243834.0123300**
	3x	3x	3x *pehmeä *Soft*
	Ø 3 - 49	Ø 38 - 125	16MnCr5

Tilausesimerkki: PS3X125L87BSET

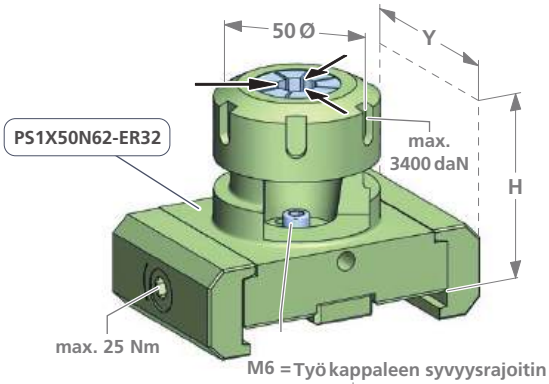
Tilattava erikseen

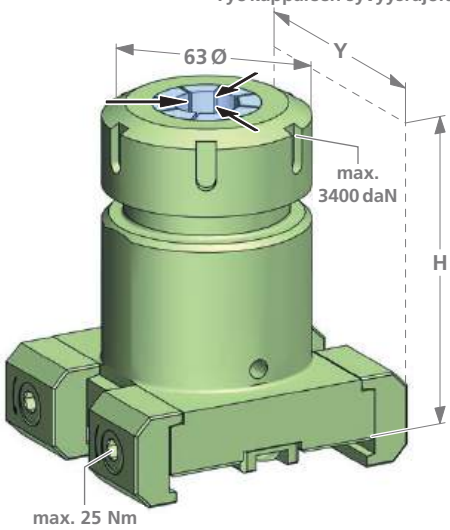
Pystykara- ja vaakakarasovelluksiin

Tilauskoodi		kg	Ø	Y
PS1X50N62-ER32	~1,3	2-22	60	62
PS1X50N100-ER32	~2,2	2-22	60	100
PS1X63N100-ER40	~2,3	3-29	80	100



Nämä holkki-istukkamoduulit mahdollistavat tankomaisten kappaleiden kiinnittämisen helposti ja suoraan

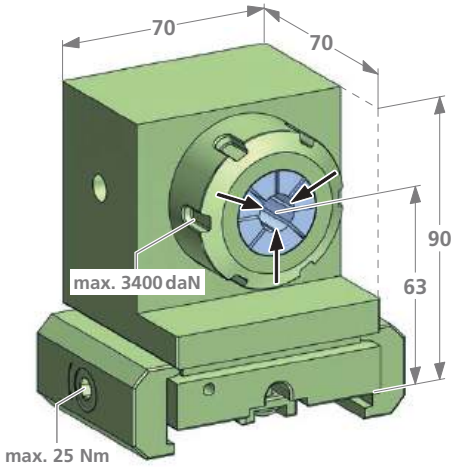




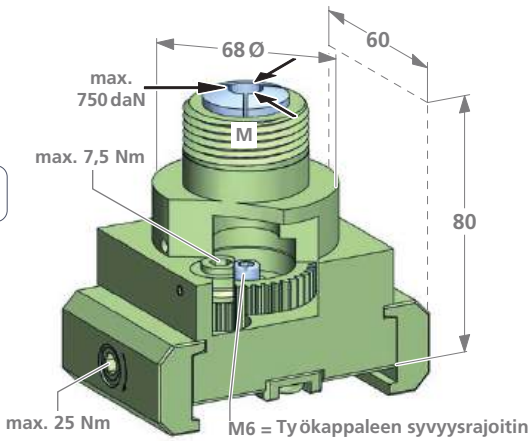
Tilauskoodi	kg	Ø
PS1X50N70H-ER32-NS	~2,98	2-22

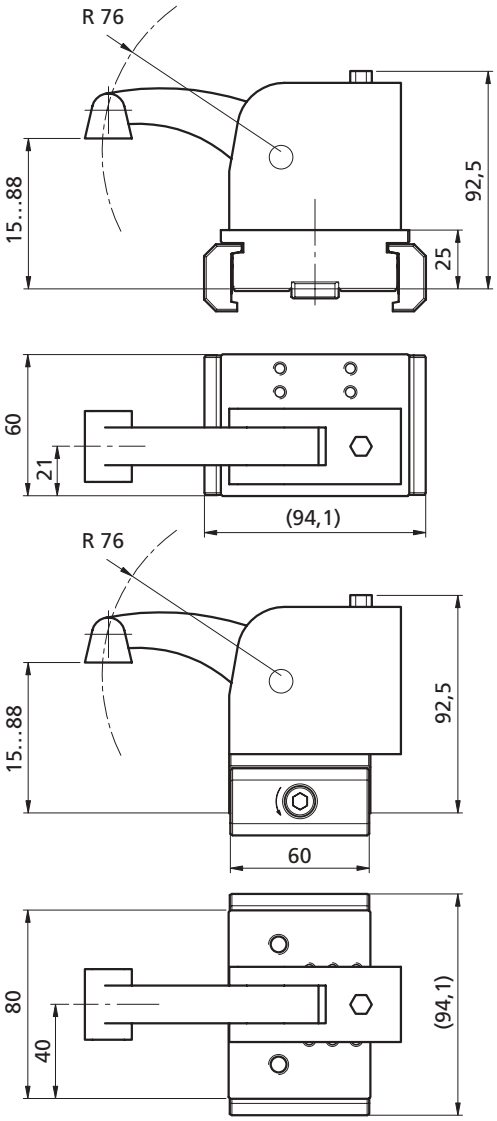
Sivupuristimia voidaan kääntää 90° jolloin holkki-istukka voidaan asettaa kiskon suuntaisesti pitkien tankomaisten kappaleiden kiinnittämiseksi, tai esimerkiksi kiilaurien jyrsimiseksi

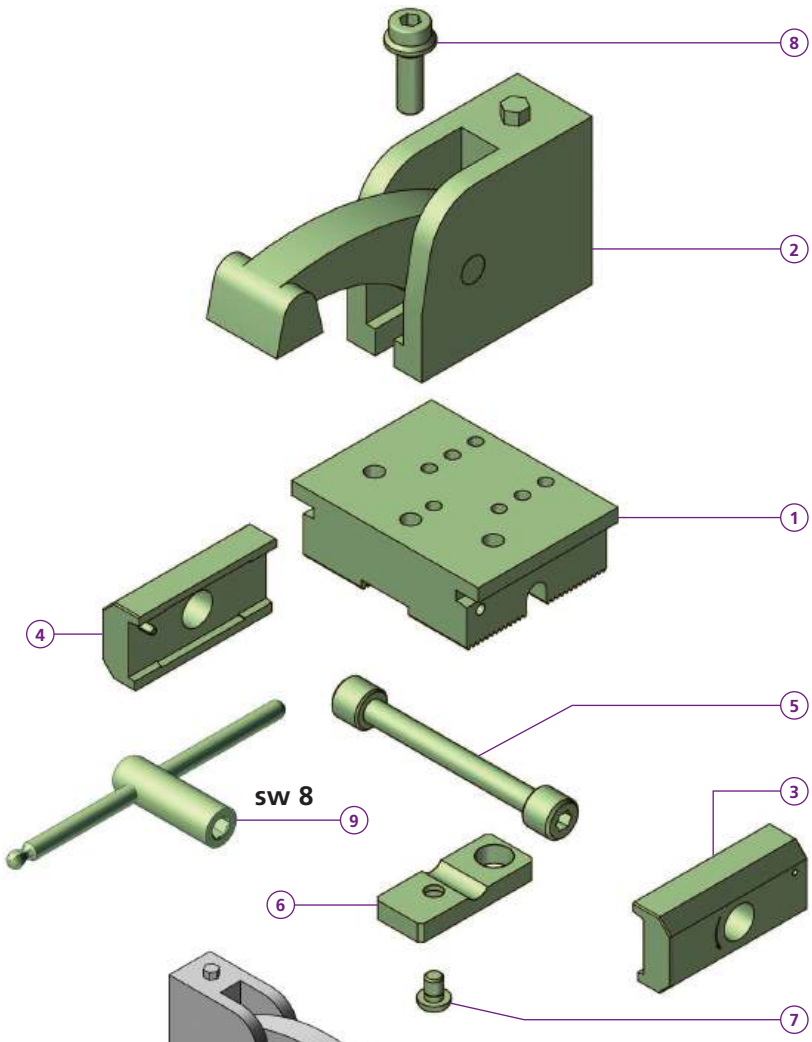
NS = Vapaasti sijoitettavissa ilman lukitusta

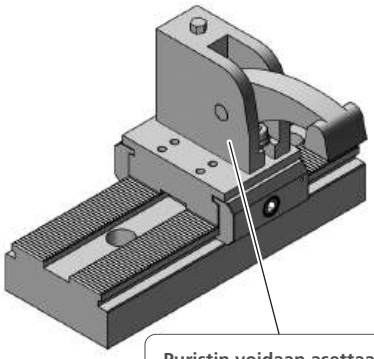


Tilauskoodi	kg	Ø	M
PS1X68N80-W20	~1,8	0,5-20	M37,6x3

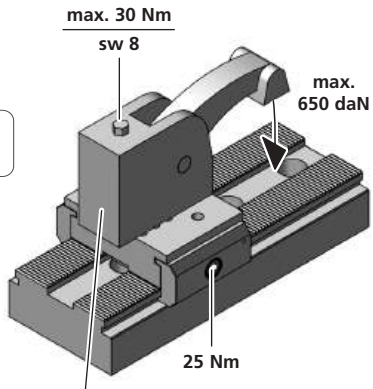








Puristin voidaan asettaa myös poikittain



Puristin voidaan asettaa kiskon suuntaisesti

PS1F-KLD1		
1	1x	PCTMV1F
2	1x	07-020
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	1x	M8x25 TW080012-02
9	1x	07-180
kg		~2,1

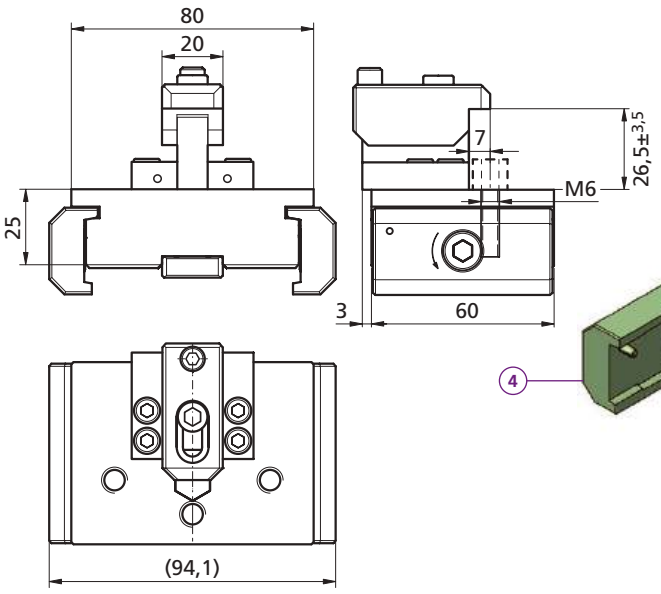
PS1F-KLD1NS		
2	1x	PCTMV1FNS
kg		~2,1

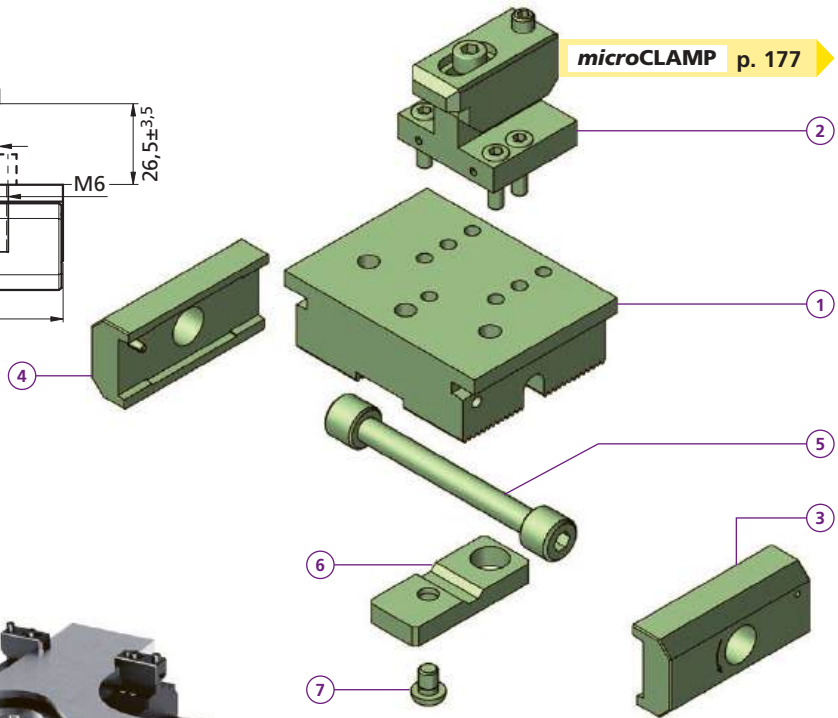
NS = Puristimen alustassa ei ole hammastusta, joten se voidaan asettaa portaattomasti kiskoon.

Tilausesimerkki: PS1F-KLD1NS

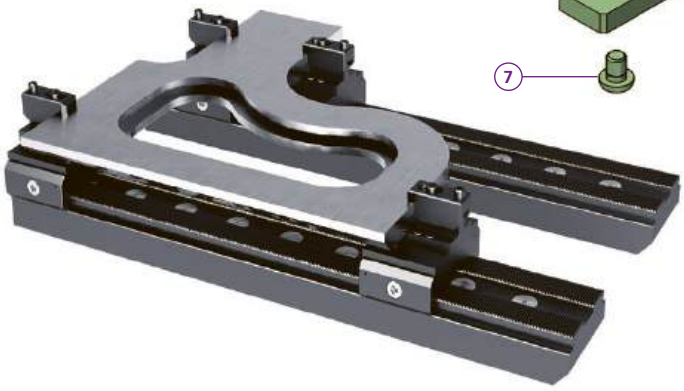
Levypuristin, (*micro*CLAMP)
Kiinnitysmoduuli Mikro keskittäville puristimmille

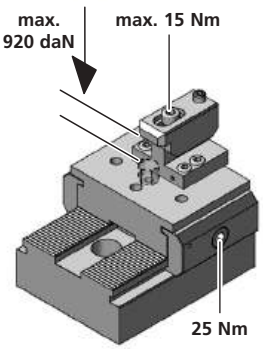
PS1F20L35BV1
PS1F20L35BV1NS
PTX-MCZ40L30 ***power*CLAMP**





*micro*CLAMP p. 177

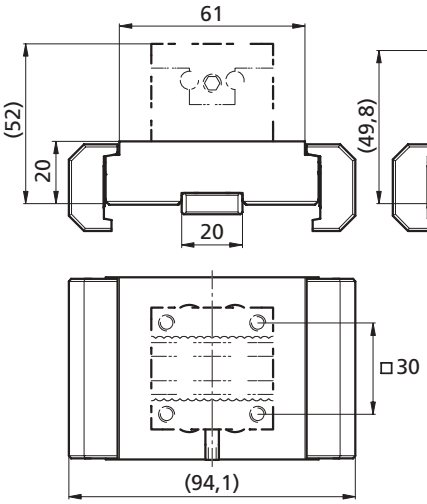


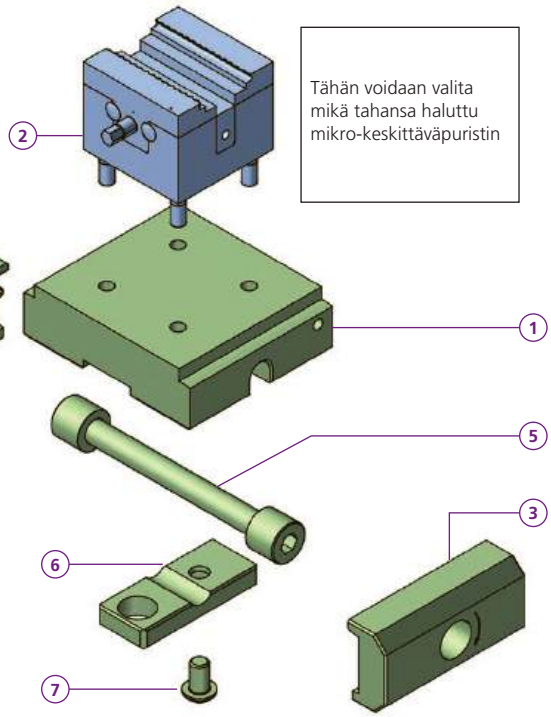


PS1F20L35BV1		
1	1x	PCTMV1F
2	1x	**MV1F20L35BV1**
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
kg		~1,4

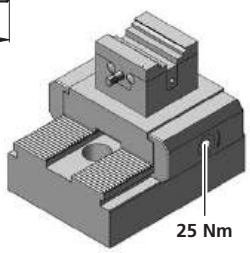
PS1F20L35BV1NS		
1	1x	PCTMV1FNS
kg		~1,4

NS = Puristimen alustassa ei ole hammastusta, joten se voidaan asettaa portaattomasti kiskoon.





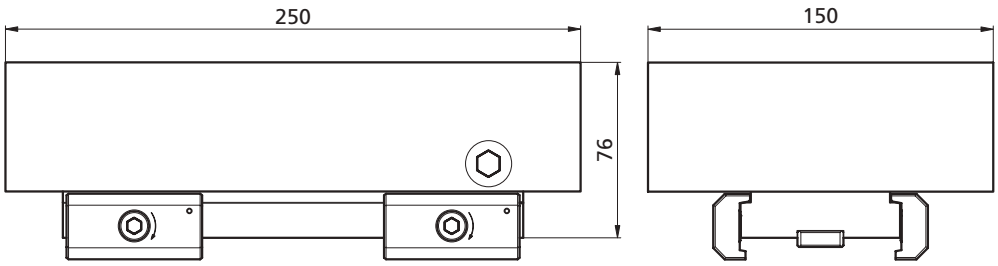
Tähän voidaan valita mikä tahansa haluttu mikro-keskittäväpuristin

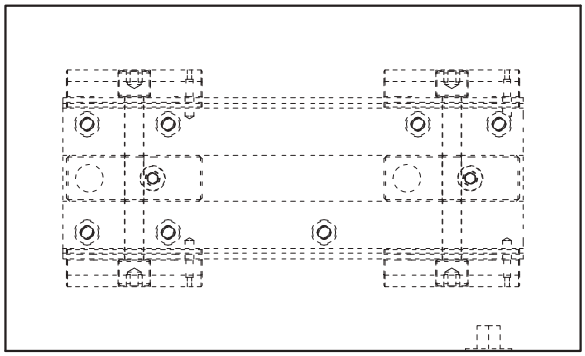


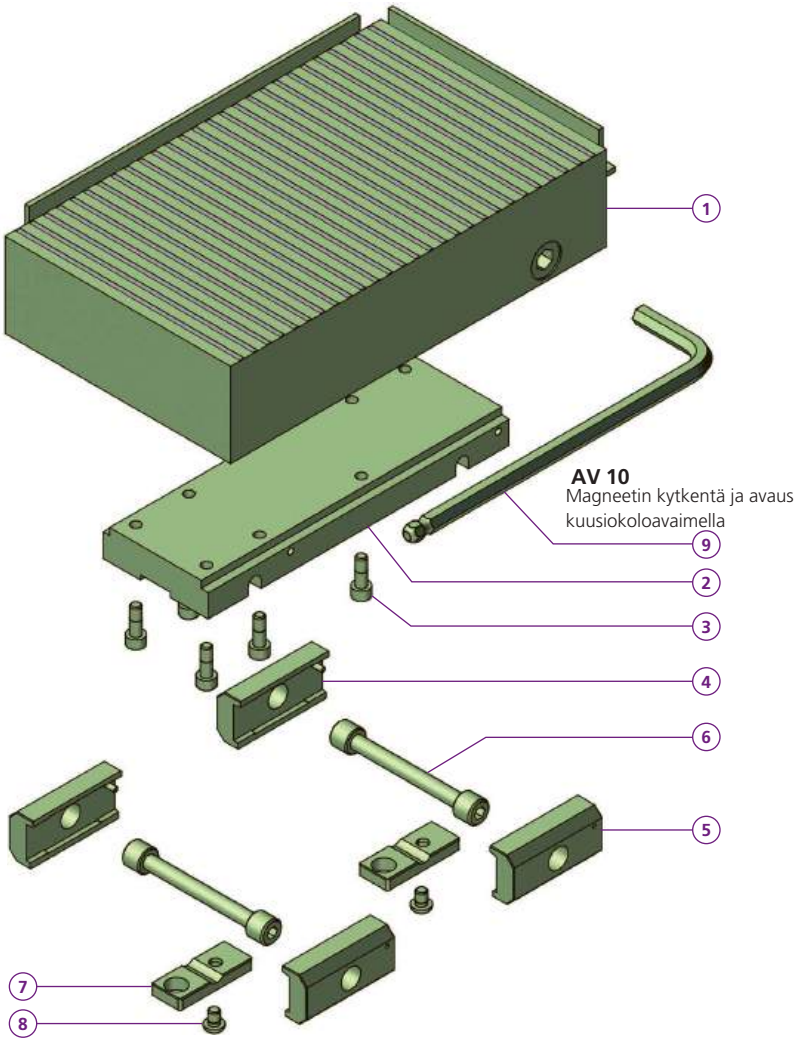
PTX-MCZ40L30		
1	1x	TB200682
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**TN100008**
kg		~0,94

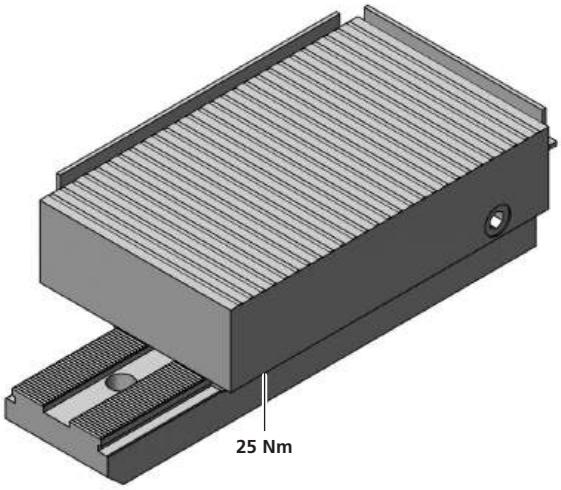
*tri*CENTRO sivu 116

Tilausesimerkki: PS1F20L35BV1

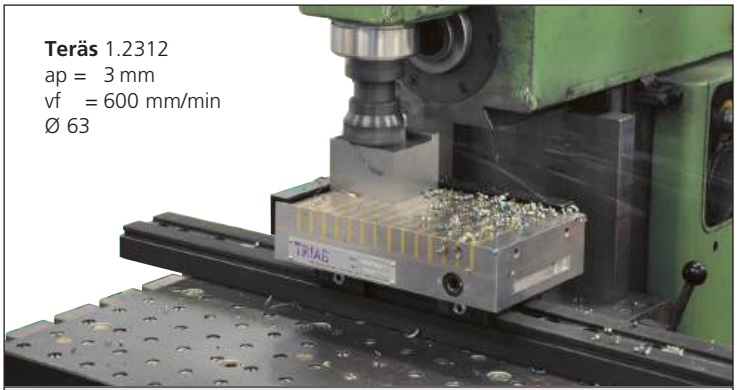








PS1X150L60-250MAG11	
1	1x XNeomill 250x150
2	1x TL110010-01
3	7x MS60
4	2x **PCSP60L**
5	2x **PCSP60R**
6	2x **PCS14**
7	2x **PCGU2049**
8	2x **M6X8ISO7380**
9	1x ISL10 DIN 911L
kg	~19,5



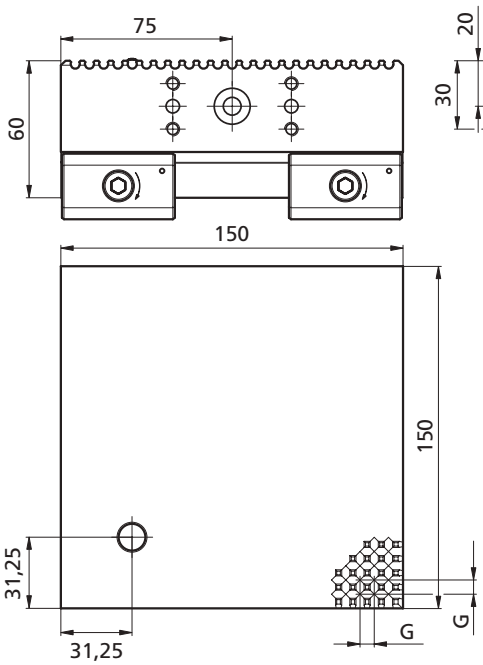
Maksimi kiinnipitovoima = 120 N/cm^2

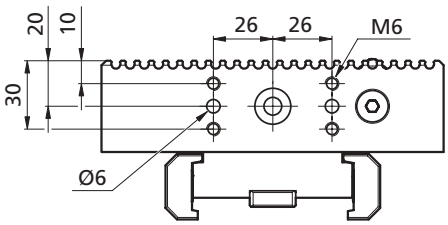
- Työkappaleen mitat optimaaliseen kiinnitykseen oltava: pituus 26mm ja paksuus 6mm.

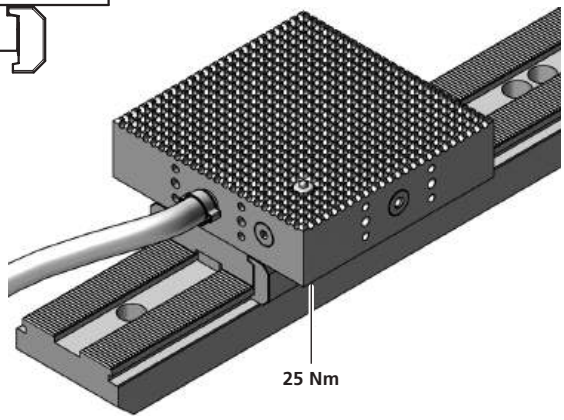
Tilausesimerkki: PS1X150L60-250MAG11

Alipaine-moduuli

PS1X150L60-VAC

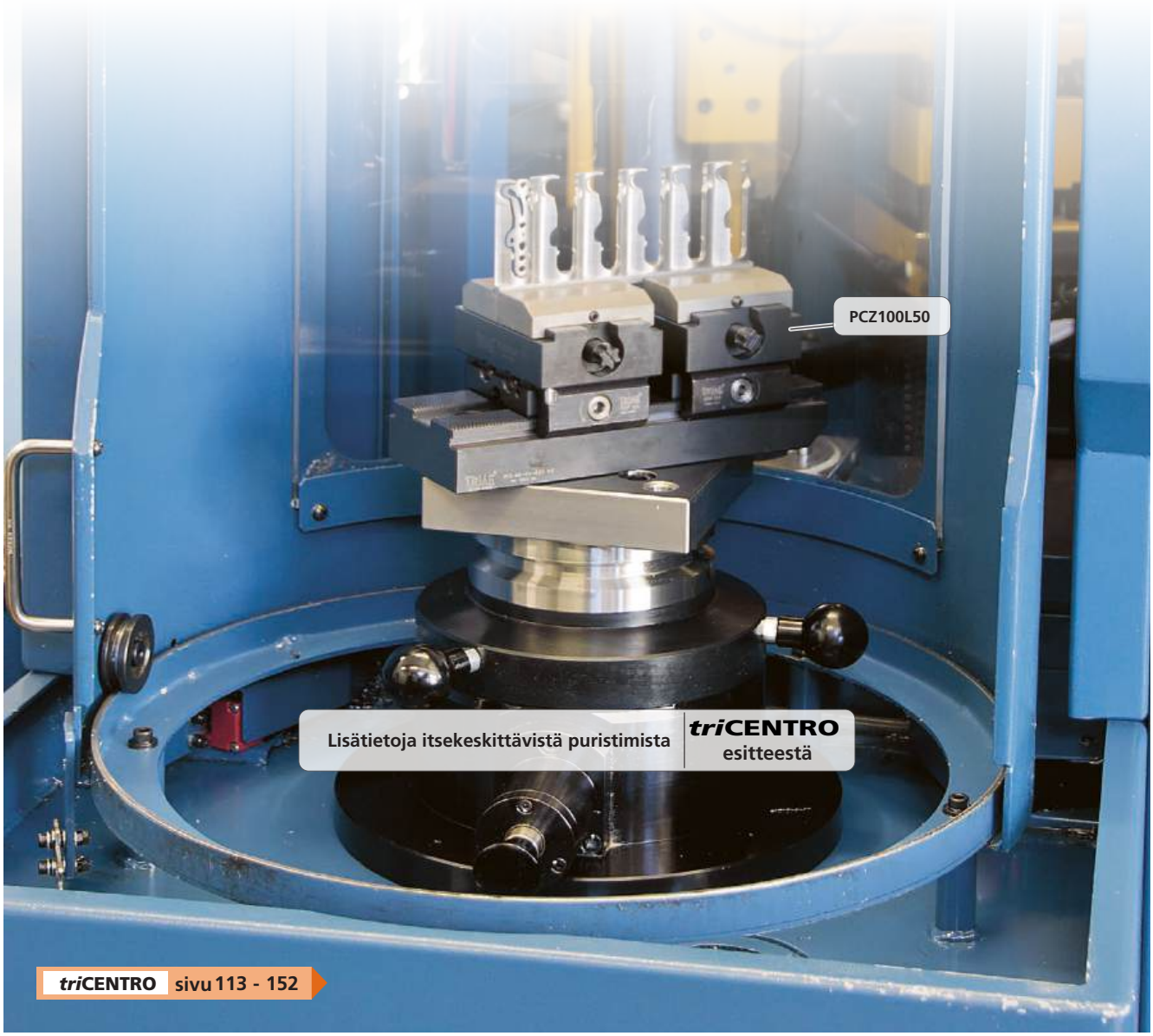


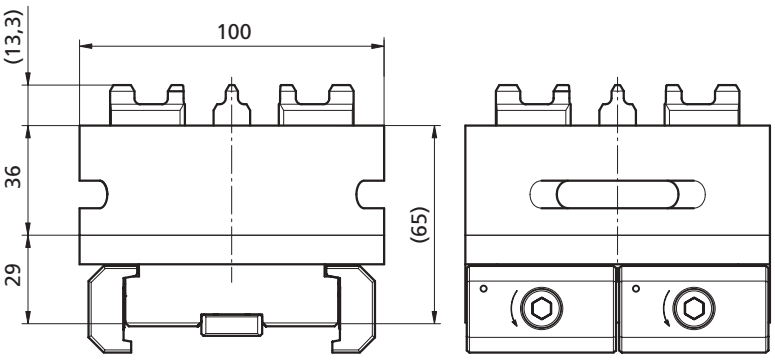


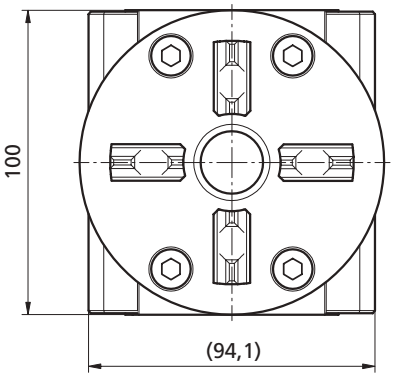


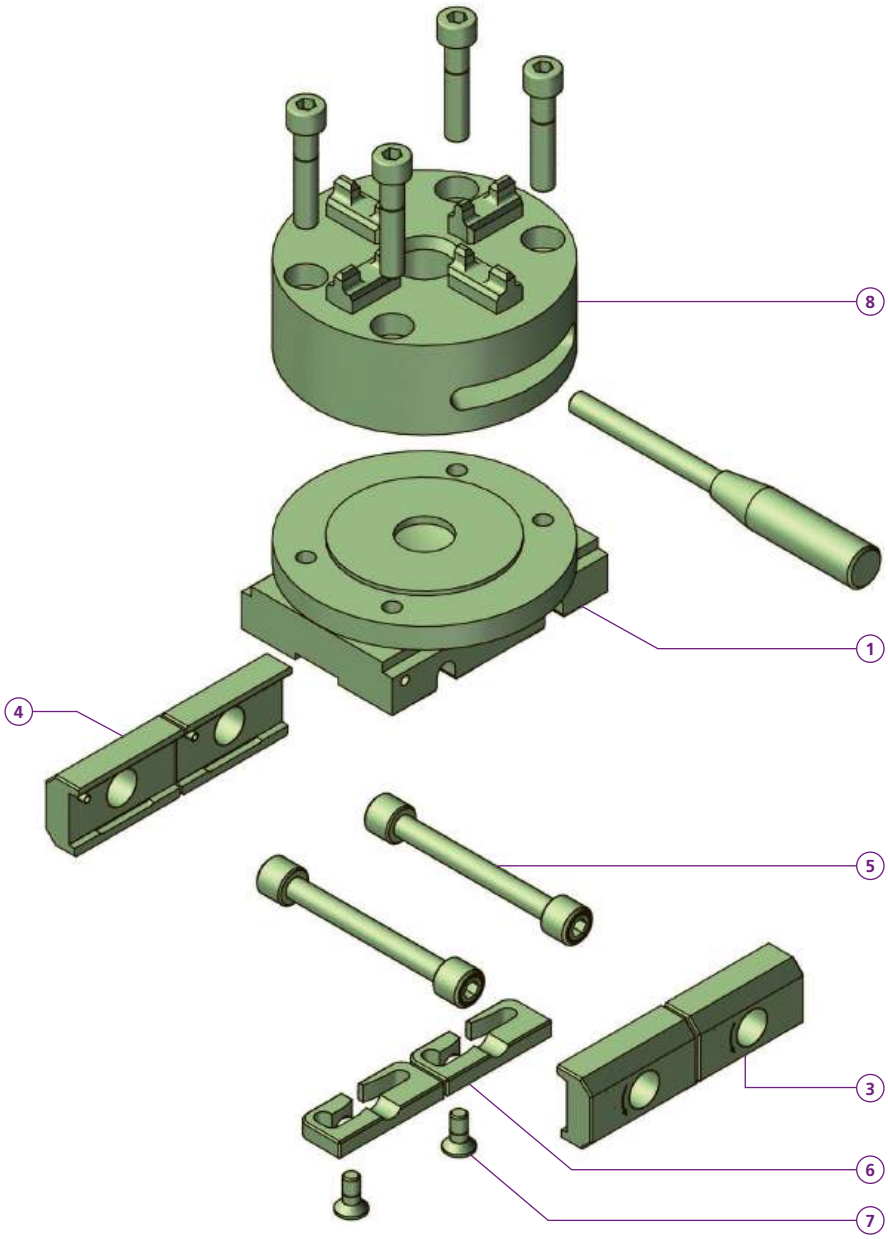
Lisätietoja alipainekiinnityksistä
trivaCLAMP sivu 318

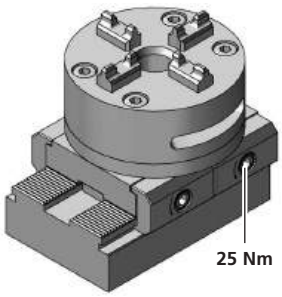
Tilausesimerkki: PS1X150L60-VAC





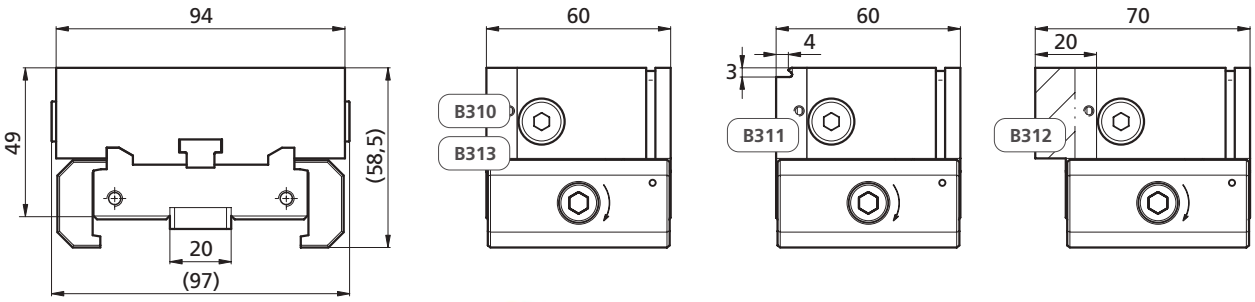


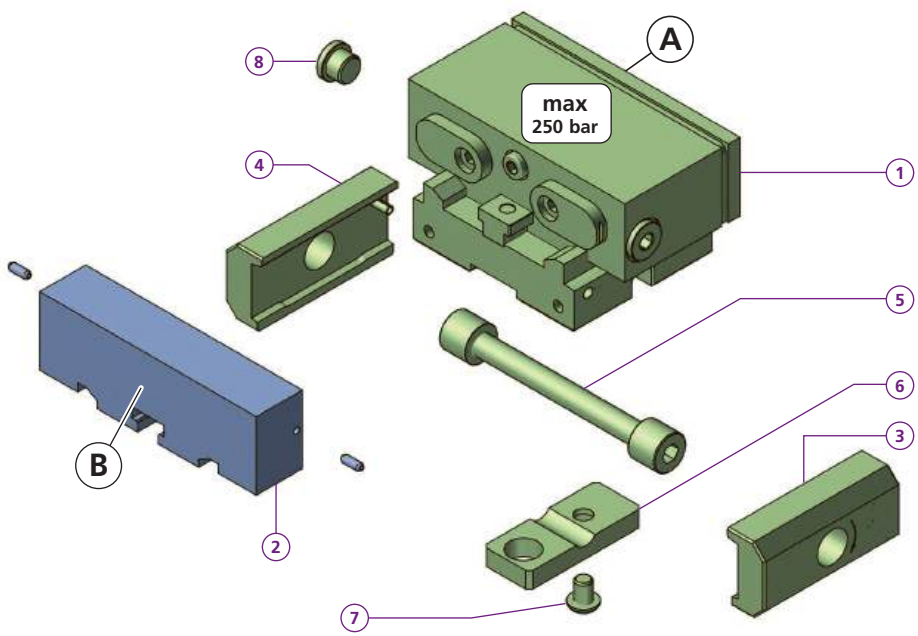


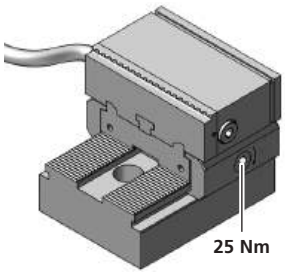


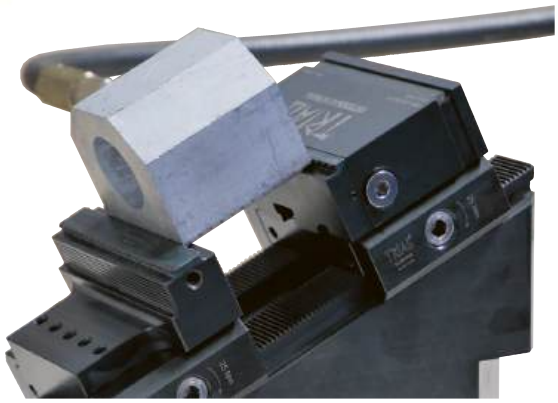
	PS1X100-65ER-036345
1	1x **PTX100-29**
3	2x **PCSP50L**
4	2x **PCSP50R**
5	2x **PCS14**
6	2x **PCGU2049F**
7	2x M6X14ISO10642
8	1x ER036345
kg	~4,0

Tilausesimerkki: PS1X100-65ER-036345









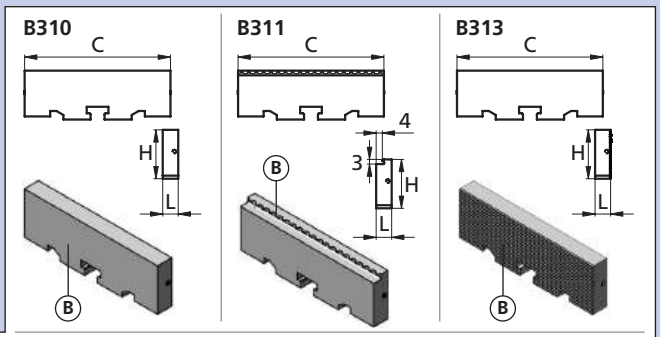
Öljymäärä
Paine / puristusvoima
8 cm³

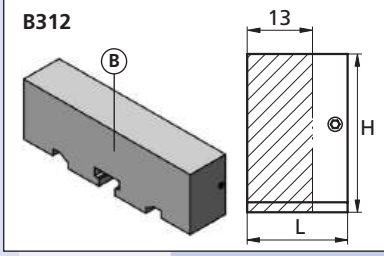
5 mm liikematka			
bar	~daN	~(lb)	~t
100	= 960	2116	0,96
150	= 1´440	3175	1,44
200	= 1´920	4233	1,92
250	= 2´400	5291	2,4

Tilausesimerkki: PSH1X94L49-310 & 1 x B310

B

	B310	B311	B312	B313
C	94	94	94	94
H	31,5	31,5	31,5	31,5
L	10	10	20	10
i	HV700 x0,2mm	57HRC	*	HV700 x0,2mm
kg	~0,18	~0,17	~0,39	~0,17





Muotoleuan koneistamiseksi:
Leikkauskuvannossa poistettavan materiaalin maksimisyvyys

A

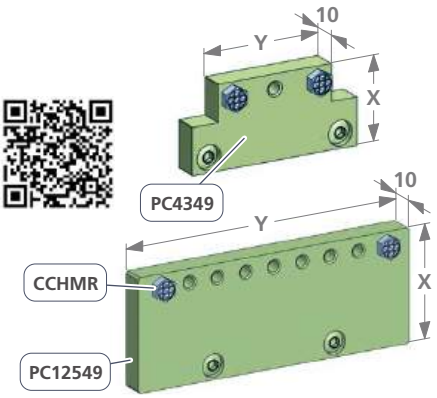
PSH1X94L49-310		
1	1x	ZF191349
2	1x	
3	1x	**PCSP60R**
4	1x	**PCSP60L**
5	1x	**PCS14**
6	1x	**PCGU2049**
7	1x	**M6X8ISO7380**
8	2x	TN100014
kg		~1,94

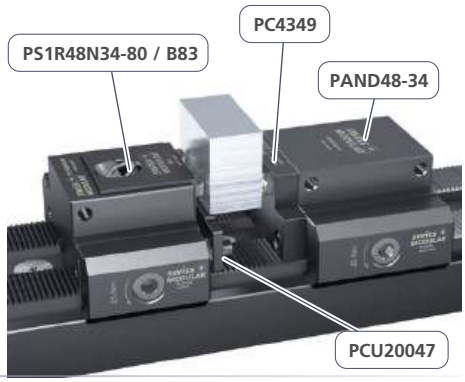
* = pehmeä 1.7225 (42CrMo4) Nuorrutusteräs

Tilattava erikseen

Karhennetuille kovametallinastoille *(CCHMR)*

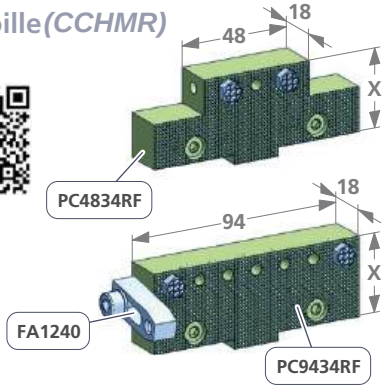
Tilauskoodi		kg	Y	X
PC4349		~0,21	43	49
PC4834		~0,17	48	34
PC12549		~0,46	125	49

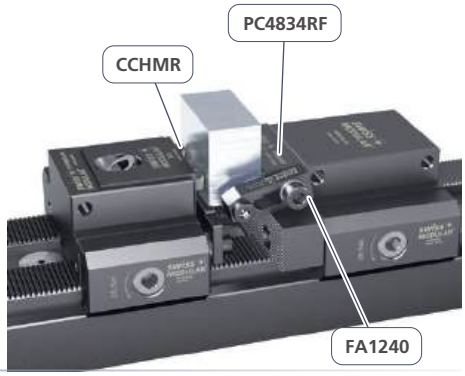




Karhennetuille kovametallinastoille *(CCHMR)* ja jyrsintä-"stopparille"

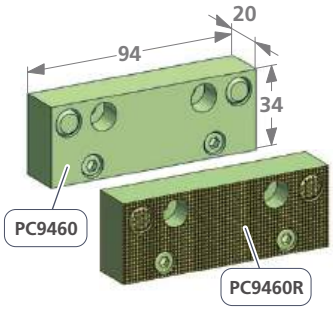
Tilauskoodi		kg	X
PC4834RF		~0,34	34
PC4849RF		~0,44	49
PC9434RF		~0,43	34
PC9449RF		~0,63	49





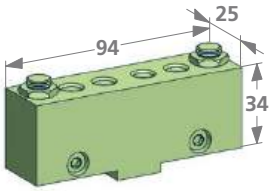
Kääntyvillä "kuulapää" tartuntanastoilla

Tilauskoodi		kg
PC9460		~0,45
PC9460R		~0,45



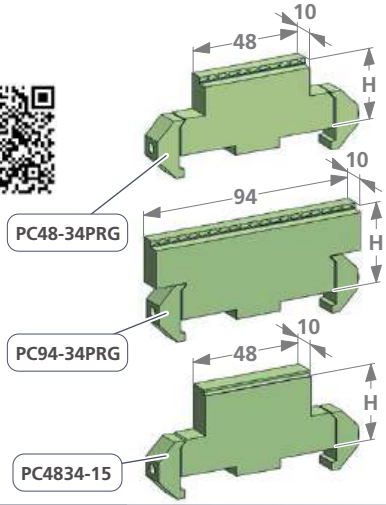
Pyöreillä hammastetuilla tartuntapaloilla

Tilauskoodi	kg
PC9434-25PRGM8	~0,64



Porrastetut leuat hammastetulla tartuntamuodolla

Tilauskoodi			kg
PC48-34PRG		~0,18	34
PC48-49PRG		~0,24	49
PC94-34PRG		~0,25	34
PC94-49PRG		~0,48	49
PC4834-15		~0,19	34
PC4849-15		~0,24	49



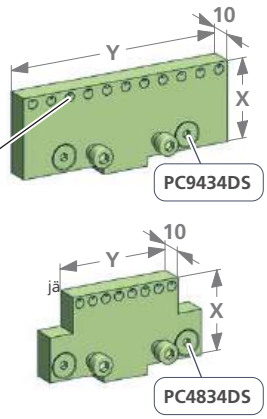
Tartuntapiikeillä

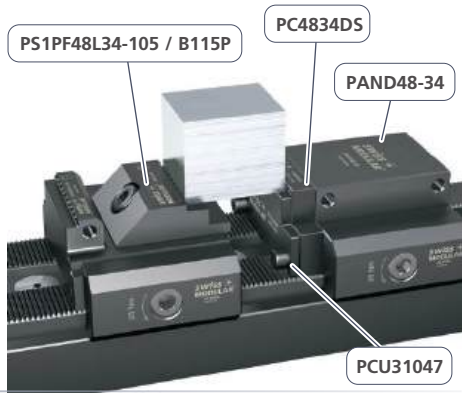
Tilauskoodi		kg	Y	X
PC4349DS		~0,22	43	49
PC4834DS		~0,17	48	34
PC4849DS		~0,23	48	49
PC9434DS		~0,27	94	34
PC9449DS		~0,38	94	49
PC12549DS		~0,49	125	49

Tartuntapiikki DSE0402-60°

Lisää tartunta-piikkejä

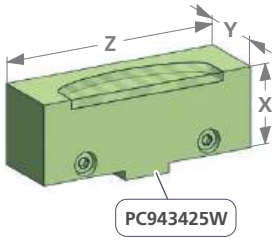
sivu 337





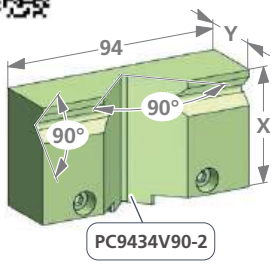
Pehmeät leuat muotoleukojen valmistamiseksi

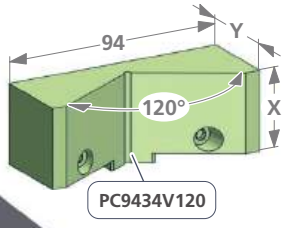
Tilauskoodi			kg	Z	Y	X
PC943425W	pehmeä teräs (1.0570)		~0,64	94	25	34
PC943430W	pehmeä teräs (1.0570)		~0,77	94	30	34
PC944930W	pehmeä teräs (1.0570)		~1,10	94	30	49
PC1254930W	pehmeä teräs (1.0570)		~1,46	125	30	49

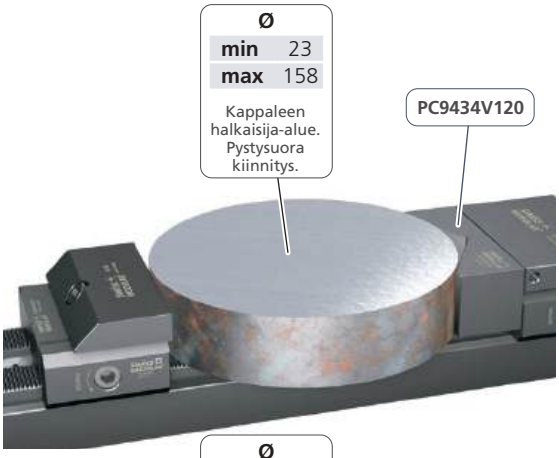


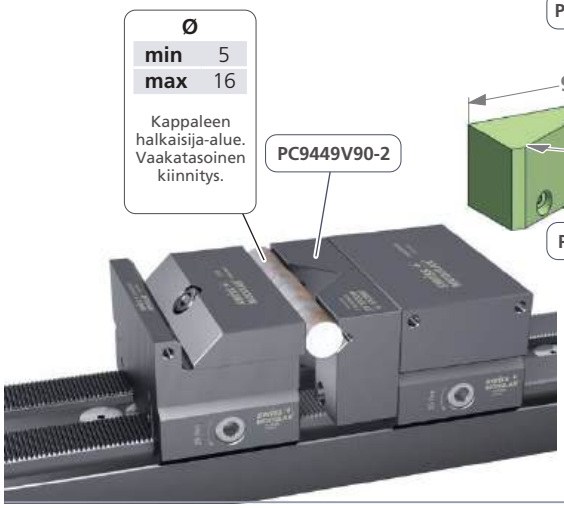
Prismaattiset leuat pyöreiden kappaleiden kiinnittämiseksi

Tilauskoodi	kg	Y	X
PC9434V90-2	~0,58	28	34
PC9449V90-2	~0,58	28	49
PC9434V120	~0,62	35	34
PC9449V120	~0,89	35	49

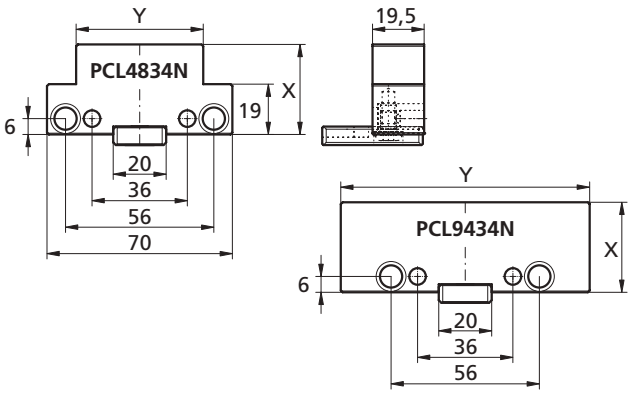


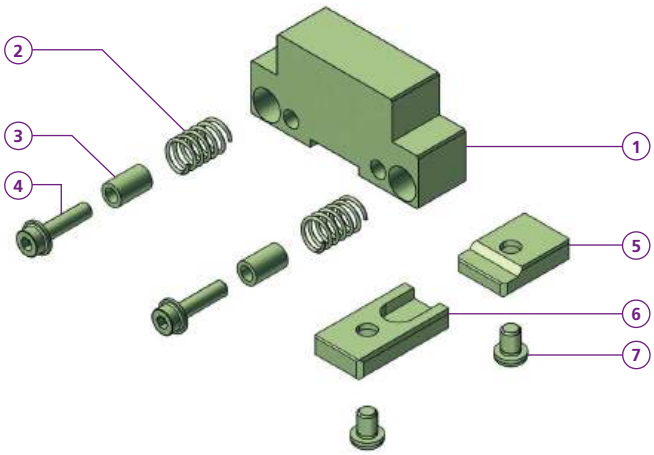






Alaspäin vetävän liikkeen muuttamiseksi lineaariseksi



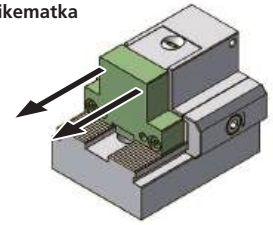


PCL4349N		
1	1x	TF140697
2	2x	FED10175
3	2x	PCD0813
4	2x	M5X20BN1392
5	1x	**PCGU2028**
6	1x	**PCGU2030LB**
7	2x	**M6X8ISO7380**
X	=	49
Y	=	43
kg		~0,43

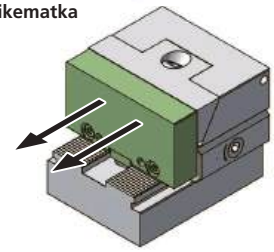
PCL9449N		
1	1x	TF140700
X	=	49
Y	=	94
kg		~0,74

PCL12549N		
1	1x	T00317
X	=	49
Y	=	125
kg		~0,97

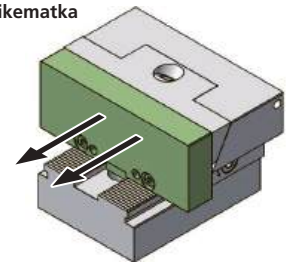
Puristusliikematka 0/+3,8



Puristusliikematka 0/+3,8

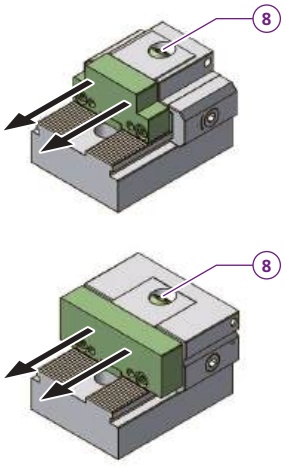


Puristusliikematka 0/+4,8



PCL4834N		
1	1x	TF140698
2	2x	FED10175
3	2x	PCD0813
4	2x	M5X20BN1392
5	1x	**PCGU2028**
6	1x	**PCGU2030LB**
7	2x	**M6X8ISO7380**
8	1x	**M10X22ISO4762**
X	=	34
Y	=	48
kg		~0,35

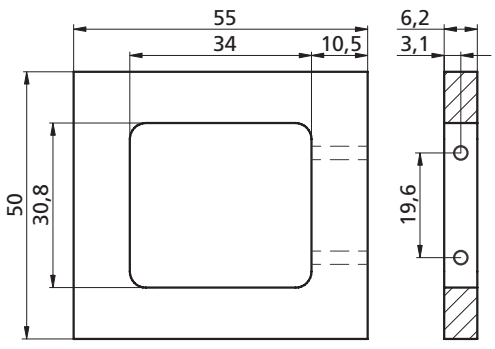
PCL9434N		
1	1x	TF140699
X	=	34
Y	=	94
kg		~0,52

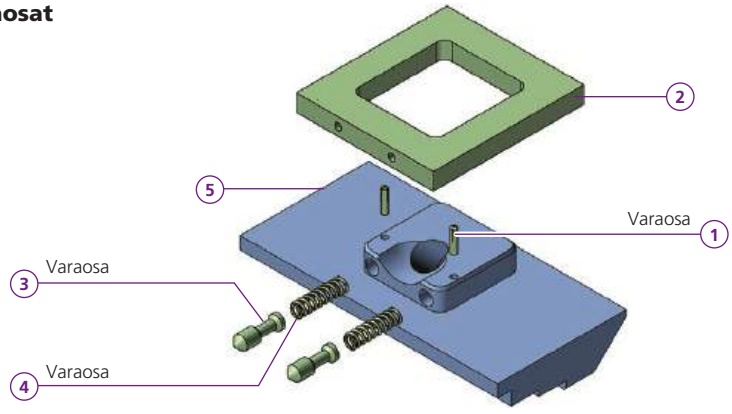


34 mm korkeiden kiinnitysmoduulien kiristysruuvi (8) on vaihdettava lyhyempään ruuviin!

Tilausesimerkki: PCL4834N

Lineaaristen leukojen kokoonpano-ohjeet ja varaosat





BL-SET		
1	2x	TN100823
2	1x	TK160609
3	2x	PCRB0516
4	2x	TN100614
5	1x	
kg		~0,08

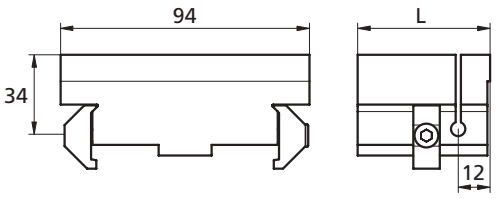
sivu 84, 85 Kaikki lineaarileuat

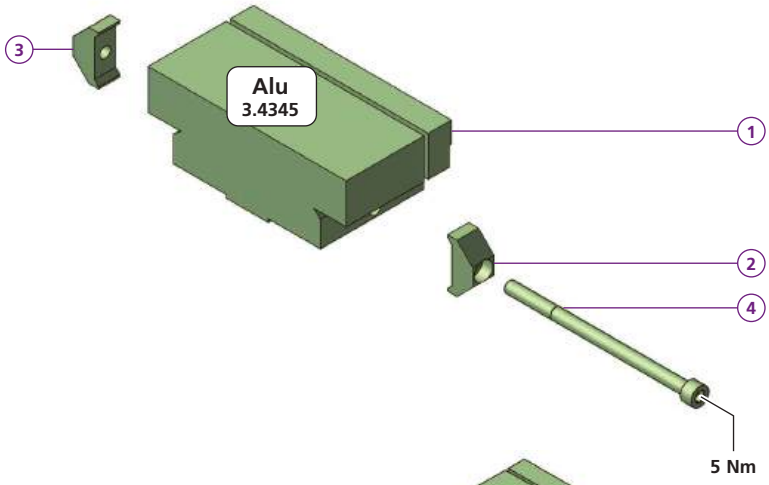
Versio tartuntapiikeillä
Elokuu 2018

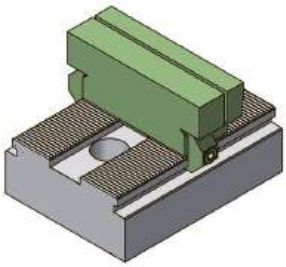
Kokoonpano-ohjeet katso video Video

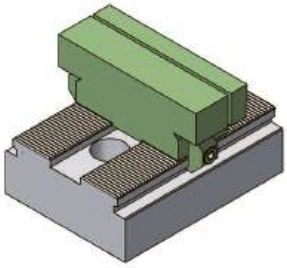
Versio kuulapää tartuntanastoilla
Elokuu 2018

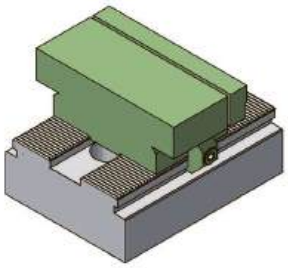
Tilattava erikseen

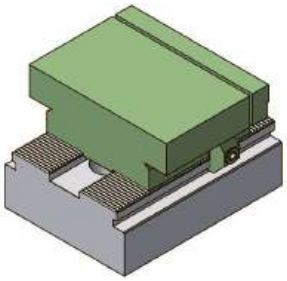












PCFX30		
1	1x	TF140702
2	1x	**PCSP10B**
3	1x	**PCSP10G**
4	1x	**M5X85ISO4762**
L	=	30
kg		~0,27

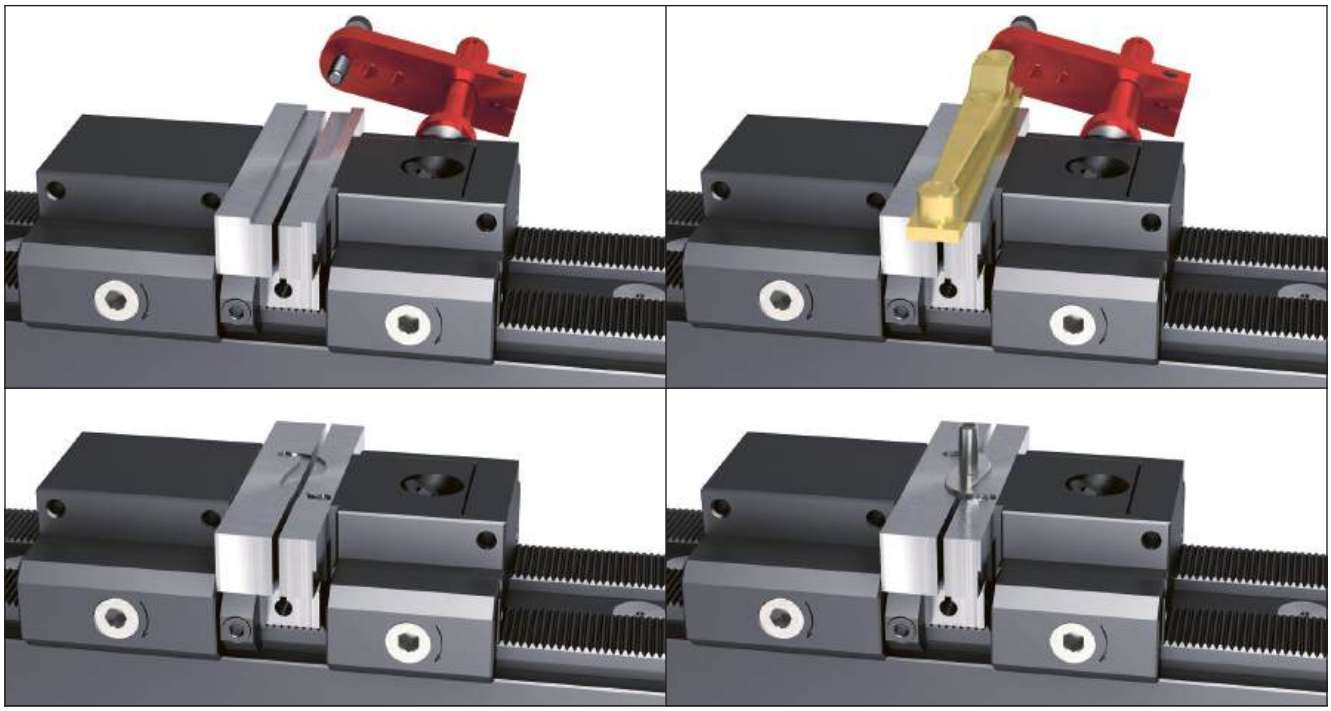
PCFX35		
1	1x	TF140703
L	=	35
kg		~0,31

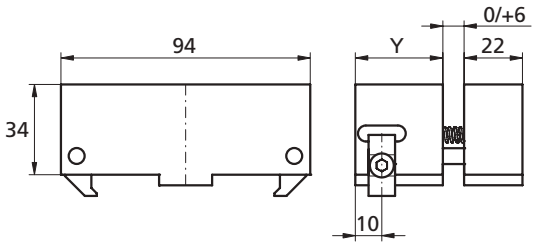
PCFX50		
1	1x	TF140704
2	1x	**PCSP10B**
3	1x	**PCSP10G**
4	1x	**M5X85ISO4762**
L	=	50
kg		~0,45

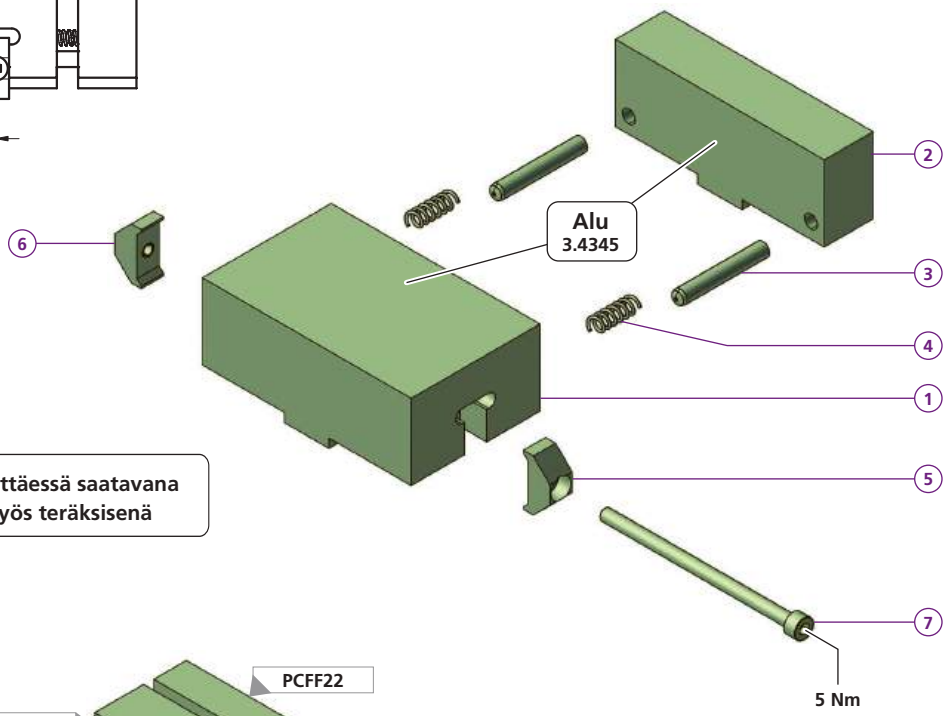
PCFX70		
1	1x	TF140705
L	=	70
kg		~0,62

Kysyttäessä saatavana myös teräksisenä

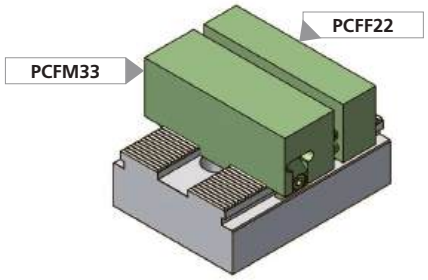
Tilausesimerkki: PCFX30

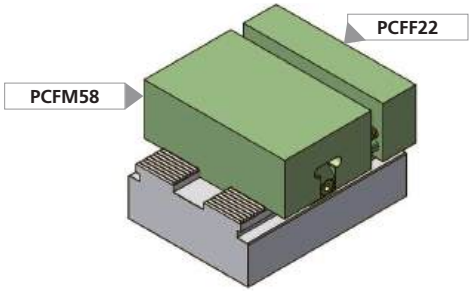






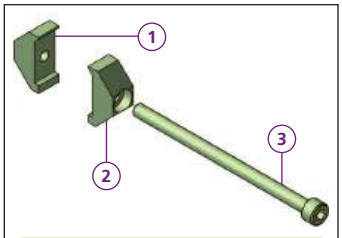
Kysyttäessä saatavana myös teräksisenä





PCFM3322		
1	1x	PCFM33
2	1x	PCFF22
3	2x	CCBO0801
4	2x	FED0618
5	1x	PCSP10B
6	1x	PCSP10G
7	1x	M5X85ISO4762
Y	=	33
kg		~0,52

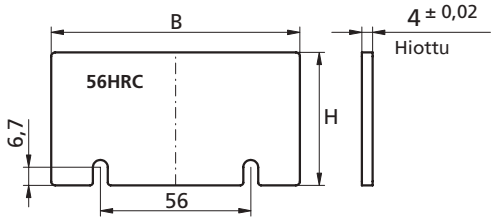
PCFM5822		
1	1x	PCFM58
Y	=	58
kg		~0,75



PCSP10SET	kg	~0,04
1	1x	PCSP10G
2	1x	PCSP10B
3	1x	M5X85ISO4762

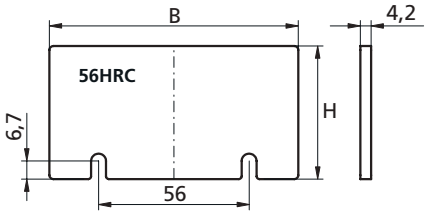
Tilausesimerkki: PCFM3322

Ohut päätypala



	B	H	kg
PCUD34093TG	93	34	~0,11
PCUD49093TG	93	49	~0,14

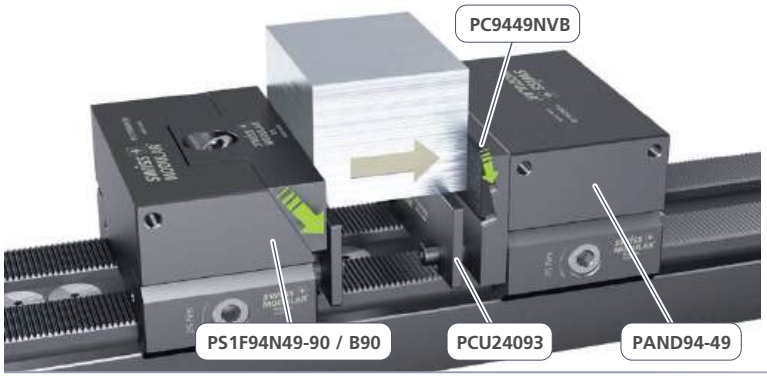
Karkaistut ja hiotut suuntaispalat

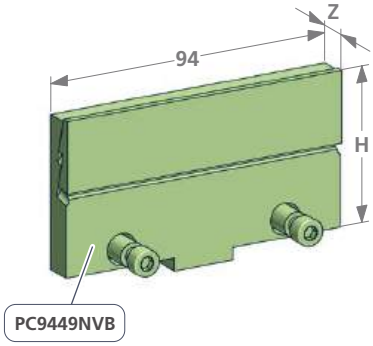


	B	H	kg
PCUD14093	93	14	~0,05
PCUD20093	93	20	~0,06
PCUD24093	93	24	~0,08
PCUD29093	93	29	~0,09
PCUD31093	93	31	~0,10
PCUD34093	93	34	~0,11
PCUD39093	93	39	~0,12
PCUD44093	93	44	~0,14
PCUD46093	93	46	~0,14
PCUD47093	93	37	~0,15

Alaspäin vetävät lisäleuat kiinteän leuan puolelle

Tilauskoodi	kg	H	Z
PC9434NVB	~0,24	49,8 – 49	10,21 – 10
PC9449NVB	~0,35	34,8 – 34	10,21 – 10

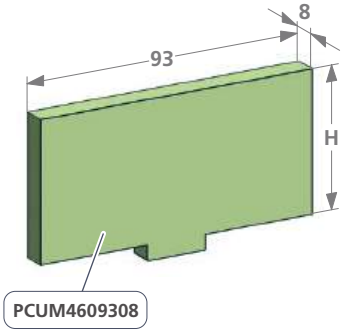


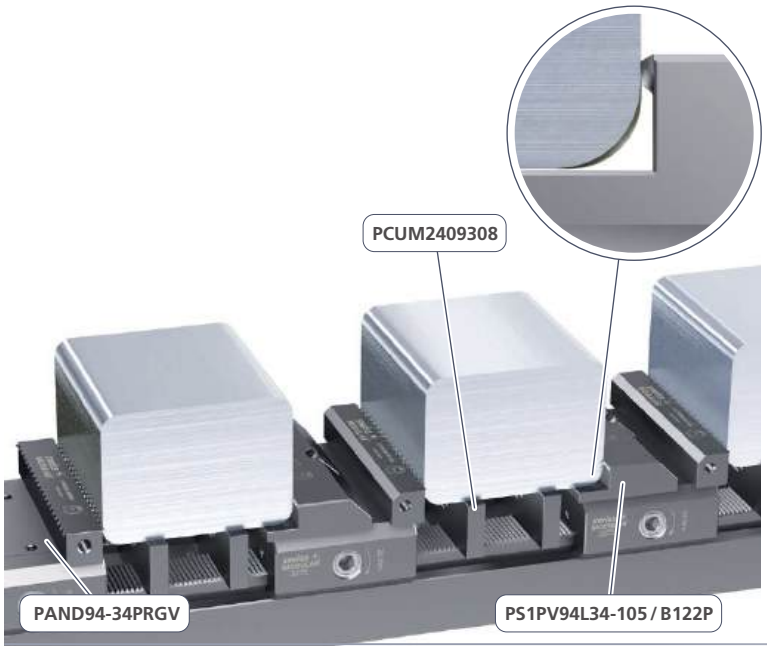


Alaspäin vetävää lisäleukaa käytetään kiinteän leuanpuolella, tasaisen voiman aikaan saattamiseksi suuntaispalaa vasten.

Magneettiset suntaispalat

Tilauskoodi		kg
PCUM1409308	~0,09	14
PCUM2009308	~0,13	20
PCUM2409308	~0,15	24
PCUM2909308	~0,18	29
PCUM3109308	~0,20	31
PCUM3409308	~0,21	34
PCUM3909308	~0,24	39
PCUM4409308	~0,27	44
PCUM4609308	~0,28	46





Nämä magneettiset suuntaispalat mahdollistavat vapaasti valittavan sijoittelun peruskiskolle. Suuremmilla nurkkasätäillä varustetuille työkappaleille sopivat kiinnitysleuat B122P / B123P käytettäväksi PAND94-34PRGV / PAND94-49PRGV -päätymoduulien kanssa.

19mm	B	H	kg
PCU20018	18	20	~0,04
PCU24018	18	24	~0,04
PCU29018	18	29	~0,05
PCU31018	18	31	~0,05
PCU34018	18	34	~0,05
PCU39018	18	39	~0,05
PCU44018	18	44	~0,05
PCU46518	18	46,5	~0,06

26mm	B	H	kg
PCU20025	25	20	~0,04
PCU24025	25	24	~0,05
PCU29025	25	29	~0,05
PCU31025	25	31	~0,05
PCU34025	25	34	~0,05
PCU39025	25	39	~0,06
PCU44025	25	44	~0,06
PCU46525	25	46,5	~0,06

34mm	B	H	kg
PCU20033	33	20	~0,04
PCU24033	33	24	~0,05
PCU29033	33	29	~0,05
PCU31033	33	31	~0,05
PCU34033	33	34	~0,06
PCU39033	33	39	~0,06
PCU44033	33	44	~0,07
PCU46033	33	46	~0,06
PCU46533	33	46,5	~0,07

43mm	B	H	kg
PCU20042	42	20	~0,04
PCU24042	42	24	~0,05
PCU29042	42	29	~0,05
PCU31042	42	31	~0,06
PCU34042	42	34	~0,06
PCU39042	42	39	~0,07
PCU44042	42	44	~0,07
PCU46042	42	46	~0,08
PCU47042	42	47	~0,08

48mm	B	H	kg
PCU20047	47	20	~0,04
PCU24047	47	24	~0,05
PCU29047	47	29	~0,05
PCU31047	47	31	~0,05
PCU34047	47	34	~0,07
PCU39047	47	39	~0,07
PCU44047	47	44	~0,08
PCU46047	47	46	~0,08

58mm	B	H	kg
PCU20057	57	20	~0,04
PCU24057	57	24	~0,05
PCU29057	57	29	~0,06
PCU31057	57	31	~0,06

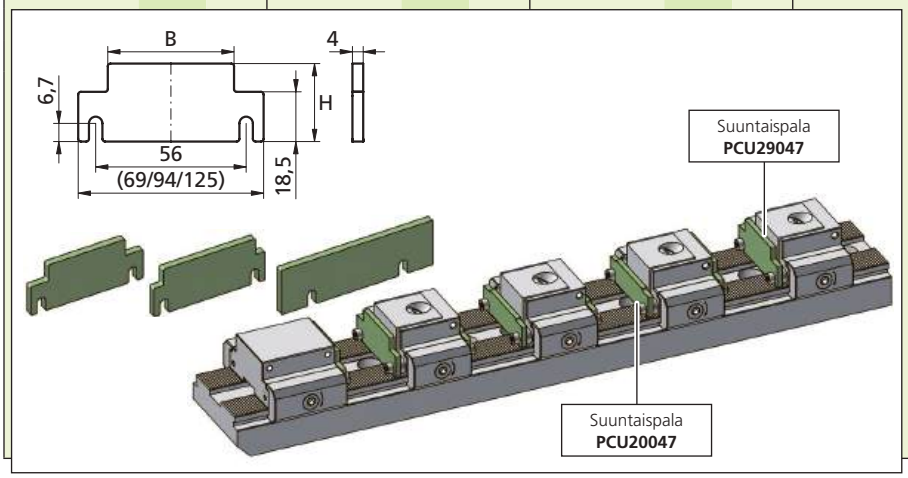
61mm	B	H	kg
PCU20060	60	20	~0,04
PCU24060	60	24	~0,05
PCU29060	60	29	~0,06
PCU31060	60	31	~0,06

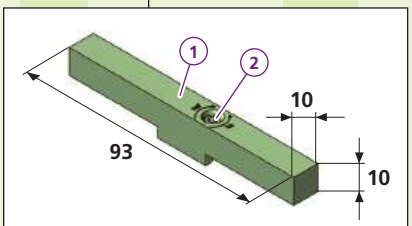
68mm	B	H	kg
PCU20067	67	20	~0,04
PCU24067	67	24	~0,05
PCU29067	67	29	~0,06
PCU31067	67	31	~0,07

78mm	B	H	kg
PCU20077	77	20	~0,05
PCU24077	77	24	~0,06
PCU29077	77	29	~0,07
PCU31077	77	31	~0,08
PCU34077	77	34	~0,08
PCU39077	77	39	~0,09
PCU44077	77	44	~0,11

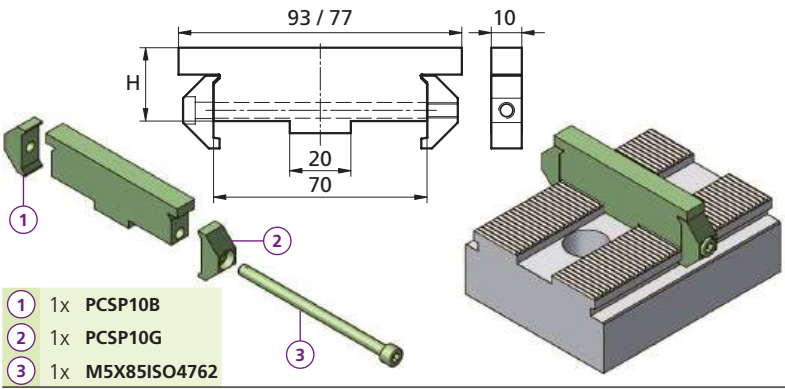
94mm	B	H	kg
PCU14093	93	14	~0,04
PCU20093	93	20	~0,06
PCU24093	93	24	~0,07
PCU29093	93	29	~0,09
PCU31093	93	31	~0,09
PCU34093	93	34	~0,10
PCU39093	93	39	~0,11
PCU44093	93	44	~0,12
PCU46093	93	46	~0,14
PCU47093	93	47	~0,14

125mm	B	H	kg
PCU20124	124	20	~0,08
PCU24124	124	24	~0,09
PCU29124	124	29	~0,11
PCU31124	124	31	~0,12
PCU34124	124	34	~0,13
PCU39124	124	39	~0,15
PCU44124	124	44	~0,17
PCU46124	124	46	~0,18





PCU10093	
1	1x TF140708
2	1x TK170037
kg	~0,085



1	1x **PCSP10B**
2	1x **PCSP10G**
3	1x **M5X85ISO4762**

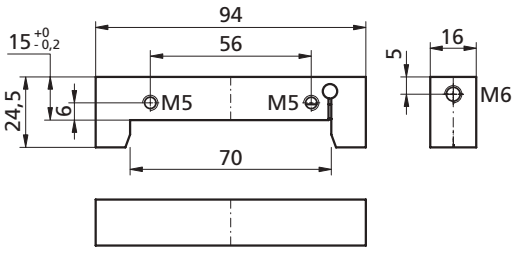
pehmeä 1.7225

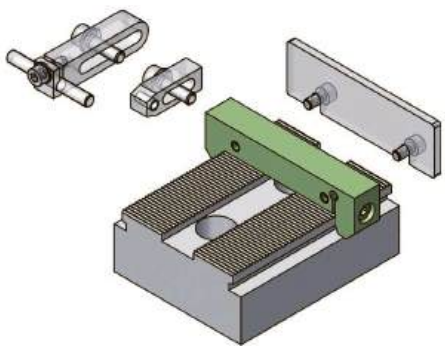
H= +0,15 +0,25	H	kg
PCU20077B10-W	20	~0,15
PCU24093B10-W	24	~0,19
PCU39093B10-W	39	~0,29
PCU44093B10-W	44	~0,33
PCU46093B10-W	46	~0,34

Karkaistu HV700 x0,2mm

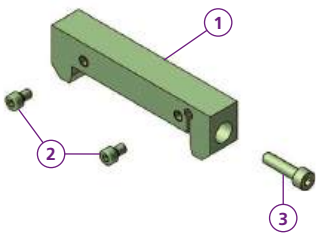
H= ± 0,005	H	kg
PCU20077B10	20	~0,15
PCU24093B10	24	~0,19
PCU29093B10	29	~0,23
PCU31093B10	31	~0,24
PCU34093B10	34	~0,27
PCU39093B10	39	~0,29
PCU44093B10	44	~0,33
PCU46093B10	46	~0,34

Pidin suuntaispaloille ja "stopparille"





PCUH2594	
1	1x TF140706
2	2x **M5X8ISO4762**
3	1x **M5X22ISO4762**
kg	~0,19



Tilausesimerkki: PCUH2594