Operating Instructions for the WEIDMANN Type HWP5 Piercing Press

WEIDMANN MASCHINENBAU AG
Margarethenstrasse 27, CH-8152 Glattbrugg
info@weidmann-maschinenbau.com / Tel. +41 (0)44 810 62 06 / Fax +41 (0)44 810 87 81 / www.weidmann-maschinenbau.com

Content

The purpose of these operating instructions

These operating instructions must be retained for the entire service life of the piercing press and must be observed whenever any activities are undertaken in connection with the piercing press.

If you sell the piercing press on to a third party, you must hand these operating instructions over to the purchaser concerned.

General safety information and general safety instructions

You may be exposed to the risks set out below whenever you use the piercing press, and you must therefore take the following protective measures:

The spindle dropping down: *Always be sure to apply the brake on the spindle ……..*

Parts falling off: *Wear safety shoes in line with EN20345*

Parts flying off: *Wear safety goggles in line with EN166 and protective gloves*

Description of the piercing press

Mechanical piercing press, manually operated.

The manufacturer rejects all liabilities for any defects that may arise as a result of any modification that may have been made to the piercing press without the written approval of the manufacturer.

Intended use

This press is intended for use by adults within indoor spaces in trading and industrial premises.

These presses can be used for all pressing-in and pressing-out operations, at pressure forces of up to 5 tonnes. The press is also suitable for the following tasks: broaching, straightening, pressing, bending, riveting, embossing, stamping and assembly tasks.

The following are examples of improper use: splitting wood and the simultaneous operation of the hand wheel by more than one person.

Only those people who have read the necessary information within the operating instructions may work with the press,or interfere with the press or its operation.

Important information about the piercing press

The piercing press is constructed in line with the current status of technology and meets the requirements of the Swiss Federal Law on Product Safety, as well as the Swiss Ordinance on Product Safety.

Dimension Diagram (Layout/Plan view), see Page 10

Drawing of Punch Insert, see Page 11

Illustration of All Parts /Replacement Parts, see Page 12

Datasheet for HSA Stud Anchors by Hilti, see Pages 13/14

Transport, handling and storage of the piercing press and/or components

The following people may be involved in these procedures: third parties; mechanics; transport agents

The following procedure must be adopted during transport:

- Prepare a euro pallet and 1 wooden batten, measuring 260 mm
- Use straps to secure the vertical piercing press at the press head. See “Dimension Diagram” on Page 10.
- Lift the piercing press

  Risk caused by gravitational force
  Check strap for damage and carrying capacity. The weight of the piercing press is set out in the “Dimension Diagram” on Page 10.

  Suspend the strap from the crane hook in accordance with the instructions

  Secure the strap in accordance with the “Dimension Diagram” on Page 10

- Use a crane to position the piercing press in the centre of the pallet
- Use the hand wheel (ring or star-shaped hand wheel) to lift the press spindle all the way to the top
- Lay the wooden batten transversely across the press table and secure to the pallet with a steel strap

  Risk of the steel straps flying off into a person’s eyes and when they are cut
  Wear protective glasses in accordance with EN166

  Wear protective gloves

- Move the press spindle completely to its lowest position and apply the spindle brake

  Risk of crushing

  Do not place your hands within the area of risk caused by the spindle

  Risk of being pulled in

  Do not touch the gear rim

- Pack the piercing press
- Use a pallet truck to transport the pallet, in accordance with instructions
- Unload the piercing press from the pallet: see section on “Putting into operation” on page 4

Putting into operation

This operation may be undertaken by: third parties; mechanics

The following procedure must be adopted when the equipment is first put into service:

- Cut off the steel straps

  Risk of the steel straps flying off into a person's eyes and when they are cut
  Wear protective glasses in accordance with EN166

  Wear protective gloves

- Unpack the press
- Check whether the spindle brake is applied; if not, apply it now
- Use straps to secure the vertical piercing press at the press head. See "Dimension Diagram" on Page 10.
- Lift the piercing press

  Risk caused by gravitational force
  Check strap for damage and carrying capacity. The weight of the piercing press is set out in the "Dimension Diagram" on Page 10.

  Suspend the strap from the crane hook in accordance with the instructions

  Secure the strap in accordance with the "Dimension Diagram" on Page 10

- Line the piercing press up slowly at the intended location

  Risk caused by gravitational force / risk of tipping over
  Set the bottom surface of the piercing press only on a base surface that is clean and even

  Set up the piercing press where you can ensure the necessary free space is available and the surface conditions are suitable for the heavy duty HSA stud anchors by Hilti (see the "Dimension diagram" on Page 10).

  Please note that there must also be enough ambient lighting to carry out the work.

- Loosen the belt
- Use heavy duty HSA M12 stud anchors by Hilti to secure the piercing press in the holes in the floor drilled for this purpose (ensuring the condition of the surface is suitable).
- Locate the rotary table in the indentation provided in the table plate

  Risk caused by incorrect loading
  For workpieces weighing more than 5 kg, use the following method to evaluate the handling method:

  www.suva.ch/88190.d**. Use lifting gear if necessary.**

Setting up

This operation may be undertaken by: users; third parties; mechanics

The following method must be used for setting up:

- Check whether the spindle brake is applied; if not, apply it now

  Risk of crushing
  Do not place your hands within the area of risk caused by the spindle

  Apply the spindle brake

  Risk of being pulled in

  Do not touch the gear rim

- Rotate the rotary table to the required slot width
- Remove the rotary table if it is not in use

  Risk caused by incorrect loading
  For workpieces weighing more than 5 kg, use the following method to evaluate the handling method:

  www.suva.ch/88190.d**. Use lifting gear if necessary.**

Tool fixing

- Hold the insert punch/tool underneath on the press spindle
- Loosen the clamping screw on the press spindle
- Remove the insert punch/tool
- Insert the insert punch/tool
- Use the clamping screw on the press spindle to secure the insert punch/tool

  Risk caused by falling objects
  Any insert punches/tools not fabricated by the manufacturer must be manufactured in accordance with the drawing of the insert punch on Page 11.

  If the insert punch/tool is loose, tighten the clamping screw.

Operating the press (production)

This operation may be undertaken by: users; third parties; mechanics

At the operational stage (production), the procedure below must be followed:

- Take the workpiece and place it upon the rotary table or table plate

  Risk caused by incorrect loading
  For workpieces weighing more than 5 kg, use the following method to evaluate the handling method:

  www.suva.ch/88190.d**. Use lifting gear if necessary.**

- Take the insert and place it in the intended location on the workpiece
- Use the hand wheel (ring or star-shaped hand wheel) to move the press spindle onto the workpiece

  Risk of crushing
  Do not place your hands within the area of risk caused by the spindle

  Apply the spindle brake

  Risk of being pulled in

  Do not touch the gear rim

- The press spindle may only be moved if no part of the body is within the area of risk
- The press spindle presses on the workpiece
- Use the press spindle to press the workpiece at the required position
- Raise the spindle press
- Remove the workpiece

  Risk caused by incorrect loading
  For workpieces weighing more than 5 kg, use the following method to evaluate the handling method:

  www.suva.ch/88190.d**. Use lifting gear if necessary.**

Cleaning
This operation may be undertaken by: users; third parties

Cleaning tasks must be carried out as follows:

- Use a cleaning cloth to clean the press spindle on a weekly basis

Maintenance
This operation may be undertaken by: third parties; mechanics

Maintenance tasks must be carried out as follows:

- Use slideway oil to lubricate the press spindle on a weekly basis
- Use a universal grease to lubricate the grease nipple on the drive mechanism every 6 months
- Check the Teflon brake disk on the hand wheel every year and replace as necessary

Replacing the Teflon brake discs
Only original replacement parts may be used for this procedure (Order no.: Teflon brake disk).

- Lower the press spindle onto the table plate

Risk of crushing
Do not place your hands within the area of risk caused by the spindle

Apply the spindle brake

Risk of being pulled in

Do not touch the gear rim

- Loosen and then remove the screw on the gear rim
- Remove the gear rim.
  If the gear rim is stuck, turn an M12 screw inside the thread and use a hammer to strike the head of that screw
- Take the gear rim off the spindle
- Loosen and remove the star handle in the centre of the hand wheel
- Remove the plate washer and spacing washer
- Remove the hand wheel
- Remove the slot key
- Remove the Teflon brake disc
- Pull the pinion out

- Remove and replace the Teflon brake disc on the toothed side

- Replace the pinion
- Replace the Teflon brake disc
- Insert the slot key
- Mount the hand wheel
- Fit the galvanised spacing washer
- Fit the black plate washer with the indentation onto the hand wheel
- Fit and tighten the star handle in the centre of the hand wheel
- Slide on the gear rim
- Use a screw to fix the gear rim in place

Production stoppage

This operation may be undertaken by: third parties; mechanics

The following procedure must be used in the event of production stoppages:

- Rotary table (slot width) in the wrong position: turn to the correct position as necessary
- Foreign body between table plate and workpiece: remove foreign body as necessary

Malfunction of the piercing press

This operation may be undertaken by: third parties; mechanics

The following procedure must be used in the event of a malfunction of the piercing press:

- The press spindle lowers of its own accord: apply the spindle brake

Taking out of service

This operation may be undertaken by: third parties; mechanics

The following procedure must be used to take the equipment out of service:

- Raise the rotary table and lift it out of the centring hole on the table
- Move the press spindle completely to its lowest position and apply the spindle brake

Risk of crushing

Do not place your hands within the area of risk caused by the spindle

Risk of being pulled in

Do not touch the gear rim

- Loosen the Hilti HSA stud anchors on the floor
- Use a crane to place the piercing press on a pallet (see operating method for Transport, Page 3)

Disposal

This operation may be undertaken by: third parties; mechanics; transportation providers, disposal specialists

The following procedure must be used for disposal of the equipment:

- Remove oil and grease
- Dismantle plastic components and dispose of them correctly
- Dispose of metal components correctly

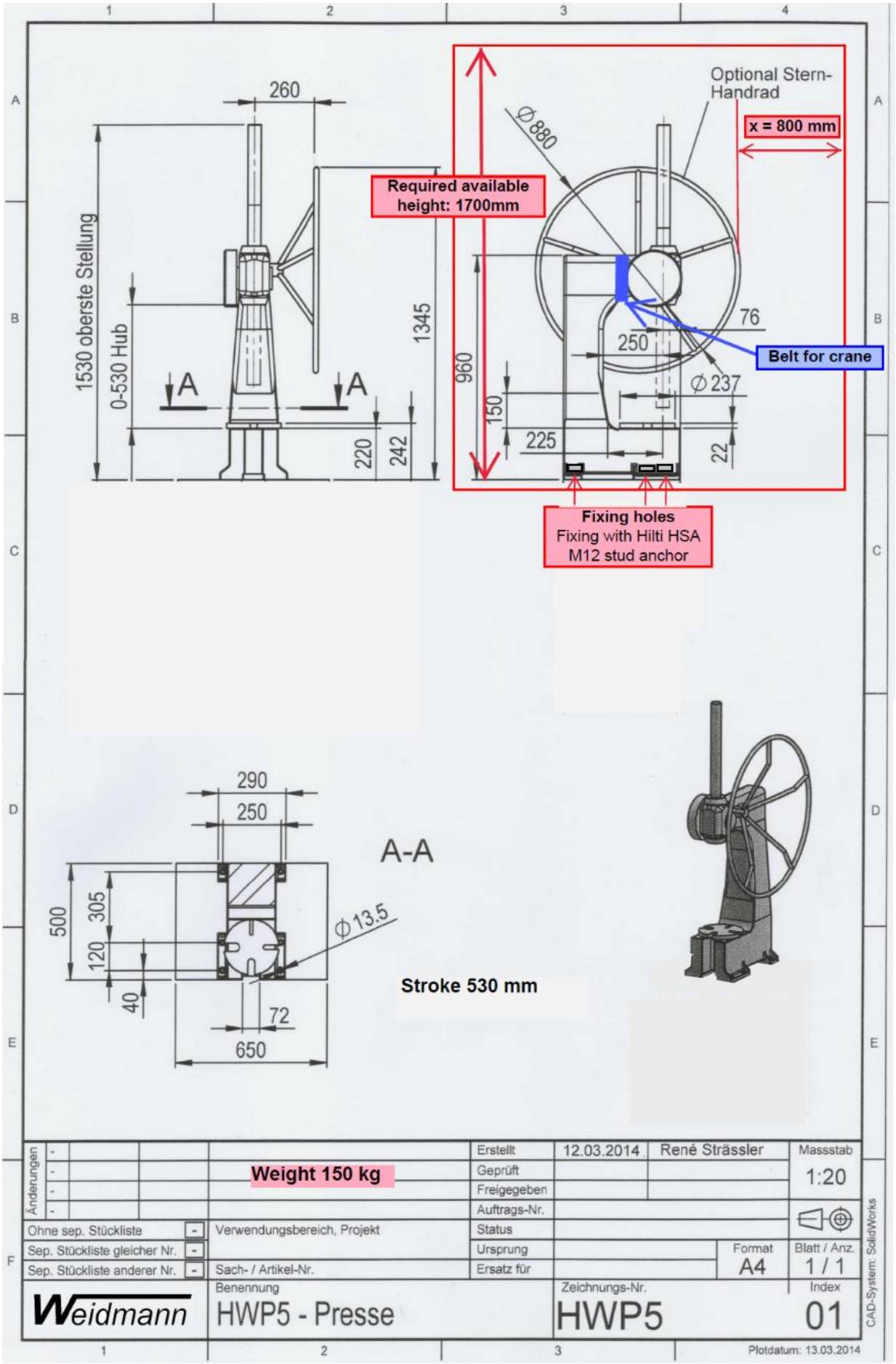
CE Conformity Declaration

We hereby declare that we **may not attach any CE label** to our piercing presses, since these presses are operated solely by human effort and do not include any lifting procedures. As a result, they do not fall within the scope of EU Machinery Directive 2006/42/EC.

Extract from EU Machinery Directive 2006/42/EC
Within the meaning of Article 1 of the Machinery Directive, machines must, according to Article 2 of the Machinery Directive, exhibit one of the following characteristics in respect of their drive systems:

- an assembly, fitted with or intended to be fitted with a drive system other than directly applied human or animal effort, consisting of linked parts or components, at least one of which moves, and which are joined together for a specific application
- an assembly of linked parts or components, at least one of which moves and which are joined together, intended for lifting loads and whose only power source is directly applied human effort.

Dimension Diagram (Layout/Plan View)



Drawing of Punch Insert

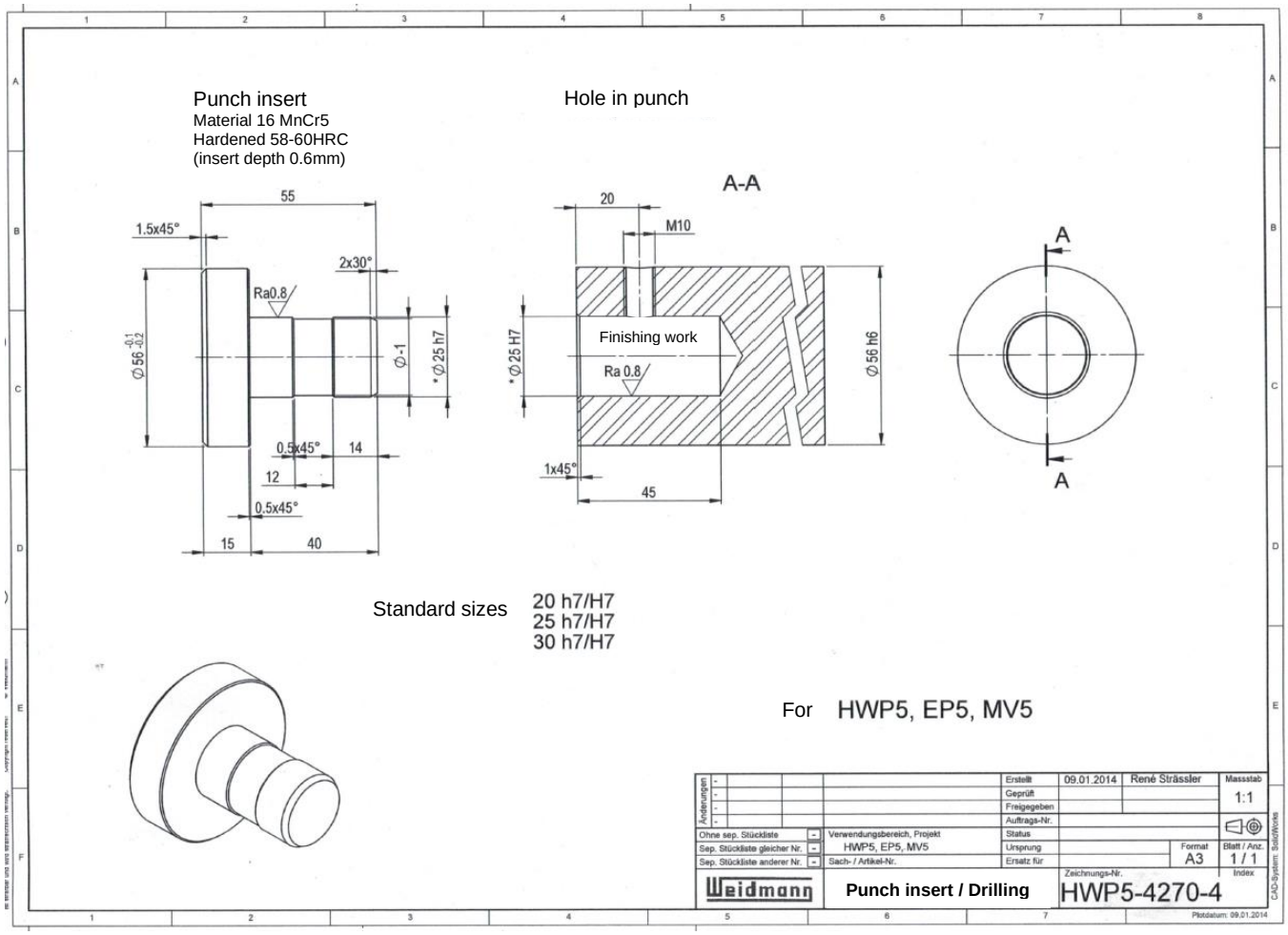
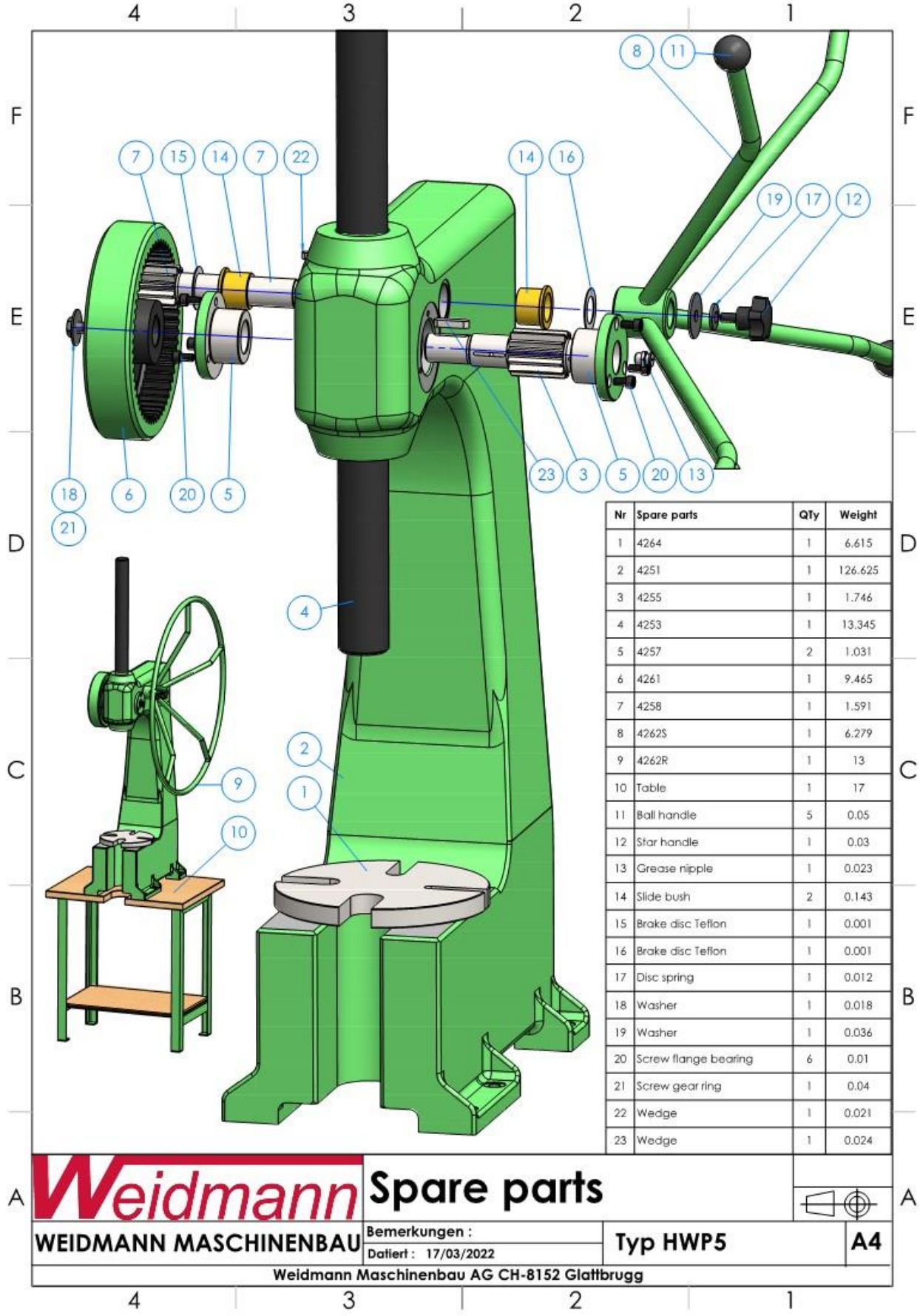


Illustration of all Parts/Replacement Parts



Nr	Spare parts	QTy	Weight
1	4264	1	6.615
2	4251	1	126.625
3	4255	1	1.746
4	4253	1	13.345
5	4257	2	1.031
6	4261	1	9.465
7	4258	1	1.591
8	4262S	1	6.279
9	4262R	1	13
10	Table	1	17
11	Ball handle	5	0.05
12	Star handle	1	0.03
13	Grease nipple	1	0.023
14	Slide bush	2	0.143
15	Brake disc Teflon	1	0.001
16	Brake disc Teflon	1	0.001
17	Disc spring	1	0.012
18	Washer	1	0.018
19	Washer	1	0.036
20	Screw flange bearing	6	0.01
21	Screw gear ring	1	0.04
22	Wedge	1	0.021
23	Wedge	1	0.024

Weidmann **Spare parts**

WEIDMANN MASCHINENBAU | Bemerkungen : | Datiert : 17/03/2022 | Typ HWP5 | A4

Weidmann Maschinenbau AG CH-8152 Glattbrugg

Datasheet for HSA Anchor Fixings by Hilti

Technische Daten Metalldübel HILTI

Segmentanker HSA

Ankertyp	Merkmale & Nutzen
 HSA (Galvanisch verzinkt)  HSA-BW mit grosser Unterlegscheibe (Galvanisch verzinkt)  HSA-R (Nichtrostender Stahl A4) (Auf Anfrage auch in A2)  Drehmomentstab S-TB (M8, M10, M12, M16)	• Geeignet für ungerissenen Beton C 20/25 bis C 50/60 • Schnelles und sicheres Aufbringen des Montagedrehmomentes mittels Tangentialschlag-schrauber und Spezialnuss möglich • 3 Einbindetiefen für höchste Flexibilität • Diamantbohren für M12 bis M20 in ETA geregelt • Zeitsparende und zulassungskonforme Montage mit dem Schlagschrauber SIW 22-A/14-A i.V.m. dem Drehmomentstab S-TB

Zulassungen/Prüfberichte

Beschreibung	Behörde/Prüfstelle	Nummer
Europäisch Technische Zulassung [a]	DIBt, Berlin	ETA-11/0374
Brandschutzprüfbericht	IBMB, Braunschweig	3215/229/12

[a] Alle in diesem Abschnitt angegebenen Daten laut ETA-11/0374.

Lastdaten (für Einzelbefestigungen).

Alle Daten in diesem Abschnitt basieren auf folgenden Grundlagen:

- Korrekte Montage (siehe Montageanweisung).
- Kein Einfluss von Achs- und Randabständen.
- Einhaltung der Mindestbauteildicke.
- Ungerissener Beton C 20/25, $f_{ck,cube}$ = 25 N/mm².

Geprüfte Befestigungen im vorbeugenden baulichen Brandschutz
für Segmentanker HSA/HSA-R

Prüfungen		• Geprüft nach der international genormten Einheitstemperaturkurve (ISO 834, DIN 4102-2) • Geprüft im gerissenen Beton bei direkter Beflammung ohne schützende Maßnahmen	
Bericht des IBMB Technische Universität Braunschweig Nr.		3049/8151	
		Maximale Lasten [kN] für geforderte Feuerwiderstandsdauer	
		90 min	120 min
HSA	M6	0,3	0,25
	M8	0,5	0,4
	M10	1,3	1,0
	M12	1,8	1,2
	M16	4,0	3,0
	M20	7,0	5,0
HSA-R Rost frei	M6	0,8	0,6
	M8	1,8	1,2
	M10	3,0	2,5
	M12	4,0	3,0
	M16	7,5	6,0

Technische Daten für Segmentanker HSA/HSA-R

• Auszug aus den Anwendungsbedingungen der Zulassung nach Bemessungsverfahren A (ETAG Annex C, 1997).

	Zulassung			ETA-11/0374 vom 19.07.2012					
	Verankerungsgrund			Beton ≥ C20/25 (B25)					
				HSA					
				M6	**M8**	**M10**	**M12**	**M16**	**M20**
	Bohrdurchmesser	d	[mm]	6	8	10	12	16	20
	Durchgangsbohrrung im Anbauteil	d_f	[mm]	7	9	12	14	18	22
	Drehmoment beim Verankern	T_{inst}	[Nm]	5	15	25	50	80	200
	Schlüsselweite	SW	[mm]	10	13	17	19	24	30
Verankerungstiefe 1	**Gerissener Beton mit reduzierter (h_{nom1}) Verankerungstiefe:**								
	1) **Zulässige Zuglast je Dübel**	N_{zul}	[kN]	-	-	-	-	-	-
	1) **Zulässige Querlast je Dübel**	V_{zul}	[kN]	-	-	-	-	-	-
	Ungerissener Beton mit reduzierter (h_{nom1}) Verankerungstiefe:								
	1) **Zulässige Zuglast je Dübel**	N_{zul}	[kN]	2,9	4,0	6,1	8,5	12,6	15,6
	1) **Zulässige Querlast je Dübel**	V_{zul}	[kN]	3,7	4,0	10,8	16,9	29,1	31,2
	Gerissener/Ungerissener Beton mit reduzierter (h_{nom1}) Verankerungstiefe:								
	4) **Achsabstand**	s_{cr}	[mm]	90	90	120	150	195	225
	4) **Randabstand**	c_{cr}	[mm]	45	45	60	75	97	113
	5) **Minimaler Achsabstand**	s_{min}	[mm]	35	35	50	70	90	195
	5) **Minimaler Randabstand**	c_{min}	[mm]	35	40	50	70	80	130
	Bohrlochtiefe	h_{nom1}	[cm]	4,2	4,4	5,5	7,2	8,5	9,8
	Mindestbauteildicke	h_{min}	[mm]	100	100	100	100	140	160
Verankerungstiefe 2	**Gerissener Beton mit Standard (h_{nom2}) Verankerungstiefe:**								
	1) **Zulässige Zuglast je Dübel**	N_{zul}	[kN]	-	-	-	-	-	-
	1) **Zulässige Querlast je Dübel**	V_{zul}	[kN]	-	-	-	-	-	-
	Ungerissener Beton mit Standard (h_{nom2}) Verankerungstiefe:								
	1) **Zulässige Zuglast je Dübel**	N_{zul}	[kN]	3,6	6,1	8,5	12,6	17,2	24,0
	1) **Zulässige Querlast je Dübel**	V_{zul}	[kN]	3,7	6,1	10,8	16,9	29,1	49,0
	Gerissener/Ungerissener Beton mit Standard (h_{nom2}) Verankerungstiefe:								
	4) **Achsabstand**	s_{cr}	[mm]	120	120	150	195	240	300
	4) **Randabstand**	c_{cr}	[mm]	60	60	75	97	120	150
	5) **Minimaler Achsabstand**	s_{min}	[mm]	35	35	50	70	90	175
	5) **Minimaler Randabstand**	c_{min}	[mm]	35	35	40	65	75	120
	Bohrlochtiefe	h_{nom2}	[cm]	5,2	5,4	6,5	8,7	10,0	12,3
	Mindestbauteildicke	h_{min}	[mm]	100	100	120	140	160	220
Verankerungstiefe 3	**Gerissener Beton mit erhöhter (h_{nom3}) Verankerungstiefe:**								
	1) **Zulässige Zuglast je Dübel**	N_{zul}	[kN]	-	-	-	-	-	-
	1) **Zulässige Querlast je Dübel**	V_{zul}	[kN]	-	-	-	-	-	-
	Ungerissener Beton mit erhöhter (h_{nom3}) Verankerungstiefe:								
	1) **Zulässige Zuglast je Dübel**	N_{zul}	[kN]	4,3 2)	7,6 2)	11,9	16,7	23,8	29,7
	1) **Zulässige Querlast je Dübel**	V_{zul}	[kN]	3,7 2)	6,1 2)	10,8	16,9	29,1	49,0
	Gerissener/Ungerissener Beton mit erhöhter (h_{nom3}) Verankerungstiefe:								
	3) **Achsabstand**	s_{cr}	[mm]	180 2)	210 2)	240	300	360	345
	3) **Randabstand**	c_{cr}	[mm]	130 2)	105 2)	120	150	180	173
	4) **Minimaler Achsabstand**	s_{min}	[mm]	35 2)	35 2)	50	70	90	175
	4) **Minimaler Randabstand**	c_{min}	[mm]	35 2)	35 2)	40	55	70	120
	Mindestbauteildicke	h_{min}	[mm]	120	120	160	180	180	220
	Bohrlochtiefe	h_{nom3}	[cm]	7,2	8,4	9,5	12,2	14	13,8

1) Lasten gelten für randferne Einzelbefestigung ohne dichte Bewehrung, Teilsicherheitsbeiwert γ_1 = 1,0 für Betonversagen (ETAG 001, Progress File).
2) Beschränkt auf redundante Verankerungen (Mehrfachbefestigungen)
3) Bei Randabstand $c \geq c_{cr}$ und Achsabstand $s \geq s_{cr}$ ist N_{zul} (Gruppe) = N_{zul} x Dübelanzahl der Gruppe
4) Die zulässige Last muss bei $s_{min} \leq s \leq s_{cr}$ und oder $c_{min} \leq c \leq c_{cr}$ entsprechend Bemessungsverfahren A (ETAG Annex C, 1997) reduziert werden.