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Loading drive data onto an Indramat/Bosch Rexroth drive from the hard drive of the HMC 500/600 control

When replacing an Indramat drive amplifier we highly recommended replacing the PCMCI personality card as well. It is easier to use the old card, but this can cause future trouble because the personality card is at least as old as the drive you are taking out! The drives we supply have new cards with the latest firmware appropriate for the drive hardware. So please take the time to reload and replace the card as well.

1. Connect a keyboard and boot your machine normally. Turn the drives on and do a "Ref all Move." After all the axes finish the reference moves to the machine reference position, **do not push "ABS All Home" or "Set"!!**

The picture below shows the position screen of a Helitronic Power Production. The numbers are different on Mini Power machines, but for this instruction is doesn't matter. The axes are now in the "reference position" and the numbers on the screen show the difference to the "machine 0 position" (geometric zero position), which is the center line of the spindle, the A-axis center, the C axis center, and so on.

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A	1.000 °		1.000	0	0.	000 °		c f	
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Y	-270.000	-27	0.000	Π	0.	000		2 1	and the second s
Z	-320.000	-32	20.000		0.	000		1	
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Eing	gabe Handparame	eter	Program	m:				Version N	CS 08 07 02
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X-Teilu	ing 0		Bearbeite	S	chneide:	1	1	von	1
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F1	F2 F3		F4				11		0.0 0.0
GET-VER	POSLADER FEHLE	R Multi	ianzeige G	FOR	e Posit Spi	6 rale	F7	F8	F9 F10

In the example below we are working with the Y axis. The procedure is the same on any other axis.

2. Put your machine in "Setup mode" with the key switch and jog the Y axis to the machine 0 position.



3. Open the door and turn the drives off using the red machine off button. Close Walter Windows mode.

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Y 0.	000	0.000
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HMC500 Power		Drebzahlfu
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Location: C/PR		Identnumm
Programs	P	Aktuell OP .:
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Search	0	
Help and Support		Schruppum
@ <u>R</u> un		Schlichtum
Shut Down		
Start WWM_Serve	er B32_Posit_	NT00
		1941

4. Start the Drive Data software



5. The Drive Data will come up like shown below, defaulting to the A axis!



6. Select "F9 axis" and then the Y axis



7. Now drive data shows the Y axis parameters



8. Select File >>> Open to load a parameter set from the hard drive



9. Select the parameter set for the Y axis (Y-65000.asc in this example) and press <Open>

A-65000.asc Y-65000.asc	A-65000.asc Y-65000.asc Type: Spe Document Date Modified: 28.10.2018 19:40 Size: 50.0 KB
	File name: Y-65000.asc
	Files of type: File type Spe (".asc) Cancel
File name:	Image: Constraint of all Operation Data Image: Constraint of all Operation Data Image: Constraint of the Constraint of CP3 Image: Constraint of CP3 Image: Constraint of CP3 Image: Constraint of CP3
Files of type: File type Spe (*.asc)	DI S-0-0022 IDN List of invalid op. Data for Comm. Ph. 3 DI S-0-0024 Config. List of the Master Data Telegram
D S-0-0258 Target Position D S-0-0259 Positioning Velocity	d F4 F5 F6 P7 F8 Group Reload Drive Phase Reset Error

10. Now the drive data shows the parameter set on the screen as "offline"



11. Select "Upload to drive" with the menu or with F2

THEFT.	File	Edit View Options H	lelp		
11511	2	Open	Ctrl+O	88	M B R
111111		Save	Ctrl-S	e Find Fin	nd next Copy Paste
Α		Save As			
		Compare with		Axis: Y-Axis	>>> SERC
		Upload To Drive	F2	tatus: Offline	
	3	Reload	F5	D	Description
	5	Print	Ctrl+P	D S-0-0001	NC Cycle Time (TNcyc)
		Print Preview		D 5-0-0002	SERCOS Cycle Time (Tscyc) Minimum AT Transmit Starking
		Print Setup		I ¹ S-0-0004	Transmit/Receive Transition
		1 4.65000		1 S-0-0005 1 S-0-0006	Minimum Feedback Acquisitio
		2 0-65000.asc		I] 5-0-0007	Feedback Acquisition Startin
				U S-0-0008	Command Valid Time (T3)
		2 C: (Andron) Spe\HPP\Q-24k	W.ASC	D S-0-0010	Beginning Address in Master
		4 C:\Andron\Spe\HPP\Hppc_	v08.asc	D 5-0-0011	Class 1 Diagnostics

12. The following steps are protected by the password **pass1**



13. If you entered the password correctly the drive data software is changing the communication phase from Phase 4 to Phase 2 and will ask you on which drive you want load the parameters. Select Y axis

				MAIS.	Pais //	SENCUS-Fridse. I	4 - Uperation Mode
ERVO-Axis	Status: Offline)-Axis	Status: (lect Axis	X	
itics nation meters Parameters	ID ID 5-0-0001 ID 5-0-0002 ID 5-0-0003 ID 5-0-0003 ID 5-0-0004	Description NC Cycle Time (TNcyc) SERCOS Cycle Time (Tscyc) Minimum AT Transmit Starting Time (T1min) Transmit/Receive Transition Time (TATMT)	's eters	ID ID 5-0-01 ID 5-0-01	Select Axis		ı))
touts	Execute Comm	and	on	D 5-0-0	A-Axis X-Axis	h	0
ection ters ition	Cha	nging to communication phase 2		Ф 5-0-0 Ф 5-0-0 Ф 5-0-0 Ф 5-0-0 П 5-0-0	Z-Axis Y-Axis C-Axis Q-Axis		m
	 □ 5-0-0011 □ 5-0-0012 □ 5-0-0013 □ 5-0-0014 □ 5-0-0015 	Class 1 Diagnostics Class 2 Diagnostics Class 3 Diagnostics Interface Status Telegram Type Parameter		Ш 5-0-0) Ш 5-0-0) Ш 5-0-0) Ш 5-0-0) Ш 5-0-0) Ш 5-0-0)			
	山 S-0-0016 口 S-0-0017 口 S-0-0018 口 S-0-0019 口 S-0-0021	Custom Amplifier Telegram Configuration List IDN List of all Operation Data IDN-list of operation data for CP2 IDN-list of operation data for CP3 IDN List of invalid on Data for Comp. Db 2	-	田 5-0-0i 田 5-0-0i 田 5-0-0i 田 5-0-0019 田 5-0-0021	OK IDN-list of operation IDN List of invalid or	Cancel	ist 2

14. Software is uploading the parameters

ation neters arameter r	! ID 5-0-0001 5-0-0002 DN Baramatar List	Description NC Cycle Time (TNcyc) SERCOS Cycle Time (Tscyc)	
unction puts	to: Y-Axis Parameter: P-0-002	4 - Signal Select Scope Channel 2	
ction ers tion		57%	3
		Cancel	0000000
	☐ 5-0-0014 ☐ 5-0-0015 ☐ 6 0 0015	Interface Status Telegram Type Parameter	00000000

15. After the upload finishes, the software shows the Y axis parameters but still sits in Phase 2

d Reload	Drive Find Find	Naj 🖻 🖬 🎒 🦓 dinext Copy Paste Print Abo
X RVO-Axis	Axis: Y-Axis Status: A002 Co	SERCOS-Phase: 2 mmunication phase 2
ation leters irameters inction luts ttion irs on	ID ID S-0-0001 ID S-0-0002 ID S-0-0003 ID S-0-0004 ID S-0-0005 ID S-0-0006 ID S-0-0007 ID S-0-0008 ID S-0-0009 ID S-0-0010	Description NC Cycle Time (TNcyc) SERCOS Cycle Time (Tscyc) Minimum AT Transmit Starting Time (T1min) Transmit/Receive Transition Time (T4TMT) Minimum Feedback Acquisition Time(T4min) AT Transmission Starting Time (T1) Feedback Acquisition Starting Time (T4) Command Valid Time (T3) Beginning Address in Master Data Telegram Length of Master Data Telegram

16. Select "F7 Phase" to change back to Phase 4



!	ID	Description
	S-0-0001	NC Cycle Time (TNcyc)
	D 5-0-0002	SERCOS Cycle Time (Tscyc)
	D 5-0-0003	Minimum AT Transmit Starting Time (T1min)
	S-0-0004	Transmit/Receive Transition Time (TATMT)
	Execute Comm	and
	Cha	inging to communication phase 4
	Cha Ø 5-0-0011	inging to communication phase 4 Class 1 Diagnostics
	Cha 10 5-0-0011 10 5-0-0012	Inging to communication phase 4 Class 1 Diagnostics Class 2 Diagnostics
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	Cha	Inging to communication phase 4 Class 1 Diagnostics Class 2 Diagnostics Class 3 Diagnostics Interface Status
	Cha Cha Cha Cha Cha Cha Cha Cha	Class 1 Diagnostics Class 2 Diagnostics Class 2 Diagnostics Class 3 Diagnostics Interface Status Telegram Type Parameter

17. The screen should show the parameters of the Y axis and Status A013 ready for power on

tergruppen > All Parameters Thitial Setup SERVO-Axis	Axis: Y-Axi Status: A013 F	SERCOS-Phase: 4-Op	peration Mode >>	
Fault Diagnostics	! ID	Description	Value	Unit
Machine Parameterr	S-0-0001	NC Cycle Time (TNcyc)	1000	usec
Control Unit Parameters	D 5-0-0002	SERCOS Cycle Time (Tscyc)	1000	usec
The Homing	CD 5-0-0003	Minimum AT Transmit Starting Time (T1min)	12	usec
Contraction Contraction	W 5-0-0004	Transmit/Receive Transition Time (TATMT)	0	usec
Analogue Outputs	EII 5-0-0005	AT Transmission Starting Time (T1)	250	usec
Position Correction	L 5-0-0007	Feedback Acquisition Starting Time (T4)	104	usec
Loop Parameters	LT 5-0-0008	Command Valid Time (T3)	479	USEL
Axis Optimization	[1] S-0-0009	Beginning Address in Master Data Telegram	25	
	III 5-0-0010	Length of Master Data Telegram	54	
	US-0-0011	Class 1 Diagnostics	000000000000000000000000000000000000000	
	EII 5-0-0012	Class 2 Diagnostics	0000000000000000	
	II 5-0-0014	Interface Status	000000001000111	
	CD 5-0-0015	Telegram Type Parameter	000000000000000000000000000000000000000	-
	1 meaning	Contrast Annalities Talantess Contrasting Fink	41444	

18. Scroll down the parameter list until the blue bar sits on "P-0-0012 – C300 Command Set absolute measurement "

_							
	D 5-0-0405	Probe 1 enable	е			000000000000000000000000000000000000000	000
	D 5-0-0406	Probe 2 enable	e			000000000000000000000000000000000000000	000
	D 5-0-0409	Probe 1 positiv	ve latched			000000000000000000000000000000000000000	000
	D 5-0-0410	Probe 1 negat	ive latched			00000000000000000	000
	D 5-0-0411	Probe 2 positiv	ve latched			000000000000000	000
	D 5-0-0412	Probe 2 negat	ive latched			000000000000000	00
	□ S-7-0109	Motor Peak Cu	Nent			50.5	A 00
	田 5-7-0111	Motor Current	at Standstill			11.2	A 00
	田 5-7-0113	Maximum Motor Speed (nmax) 6000.0000					00 RP
	D 5-7-0116	Resolution of	motor feedbac	k		5	12 Per
	D 5-7-0141	Motor Type			Mł	HD071B-061-PG0-U	JN
	D P-0-0004	Smoothing Tim	ne Constant			2	50 use
	[1] P-0-0008	Activation E-S	top function			000000000000000	00
	[1] P-0-0009	Error Message	e Number				0
	P-0-0010	Excessive Pos	ition Command	l Value		0.000	00 mm
	P-0-0011	Last valid Posi	ition Command	Value		0.000	00 mm
	P-0-0012	C300 Commar	nd 'Set absoluti	e Measurement'		000000000000000000000000000000000000000	00
	DP-0-0014	D500 Comman	nd determine m	narker position		000000000000000000000000000000000000000	00
	DP-0-0015	Memory Addre	ess			180	00
	EP-0-0016	Content of Me	emory Address			0003FF0	DI
	Щ P-0-0018	Number of Po	le Pairs/Pole Pa	air Distance			4 pole
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				F7	59	50	Lero
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19. Open up this command with <Enter> and you will see the following windows. Just push <Enter> again to "Set and enable command execution"

Command	C300 Command 'Set absolute Measurement'
Status	Command is cleared
	C Clear command
	C Set command
	C Enable command execution
	Set and enable command execution

20. The box will close and you are back to the "P-0-0012" screen

1	P-0-0014 P-0-0015 P-0-0016 P-0-0018 F4 F4	D500 Commar Memory Addr Content of Me Number of Po	nd determine m ess emory Address Ile Pairs/Pole Pa F6	ir Distance	F8	00000000000000000000000000000000000000	 pol
1	 □ P-0-0014 □ P-0-0015 □ P-0-0016 □ P-0-0018 	D500 Commar Memory Addr Content of Me Number of Po	nd determine m ess emory Address ile Pairs/Pole Pa	arker position		00000000000000000000000000000000000000	 pol
	□ P-0-0014 □ P-0-0015 □ P-0-0016 □ P-0-0018	D500 Commar Memory Addr Content of Me Number of Po	nd determine m ess emory Address le Pairs/Pole Pa	arker position		00000000000000000000000000000000000000	
	DP-0-0014 P-0-0015	D500 Commar Memory Addre	nd determine m ess	arker position		000000000000000000000000000000000000000	
	DP-0-0014	D500 Comman	nd determine m	arker position		000000000000000000000000000000000000000	
	[T] D D DDII			ricusurement		000000000000000000000000000000000000000	
	P-0-0012	C300 Comman	nd 'Set absolute	Meacurement'		000000000000000000000000000000000000000	
_	[] P-0-0011	Last valid Pos	ition Command	Value		0.0000	mn
	DP-0-0010	Excessive Pos	sition Command	Value		0.0000	mn
	P-0-0009	Error Message	e Number			(1
	D P-0-0008	Activation E-S	Stop function			000000000000000	- 1
1	D P-0-0004	Smoothing Tin	ne Constant			25) us
1	D 5-7-0141	Motor Type			MH	D071B-061-PG0-U	1
1	D 5-7-0116	Resolution of	motor feedbad	k		51	Pe
1	D 5-7-0113	Maximum Moto	or Speed (nma	0		6000.000	R
[III 5-7-0111	Motor Current	t at Standstill			11.20	A
ſ	M 5-7-0109	Motor Peak Cu	Nent			50.50	O A
ī	M 5-0-0412	Probe 2 pegat	tive latched			000000000000000000000000000000000000000	0
ſ	M 5-0-0411	Probe 2 nositis	ve latched			000000000000000000000000000000000000000	0
Ē	M 5-0-0410	Probe 1 pegat	tive latched			000000000000000000000000000000000000000	0
1	M S-0-0400	Probe 1 positis	ve latched			000000000000000000000000000000000000000	0
	T1 5-0-0406	Probe 2 enable	•			000000000000000000000000000000000000000	0
	1 5-0-0405 1 5-0-0406 1 5-0-0409	Probe 1 enable Probe 2 enable Probe 1 positiv	e e ve latched			000000000000000000000000000000000000000	000

21. Push <Enter> again and the box will pop up again but this time "Clear command" is selected.

Command:	C300 Command 'Set absolute Measurement'
Status:	Command is set and execution is enabled
	Clear command
	C Set command
	C Enable command execution
	C Set and enable command execution

22. Push <Enter> again and the box will close and you are back to the parameter page with P-0-0012 highlighted. The message on top should says "A013 ready for power on" !!



If it says "C300 Command Set absolute measuring" as shown below, you missed the "Clear command." Go back to Step 21.

	Drive Find Find	역 💼 💼 🚭 🍞 I next Copy Paste Print About
	Axis: Y-Axis Status: C300 Co	SERCOS-Phase: 4 - Operation
-	! ID	Description
	[J] 5-7-0109	Motor Peak Current
1	□ S-7-0111	Motor Current at Standstill
	D 5-7-0113	Maximum Motor Speed (nmax)
	D 5-7-0116	Resolution of motor feedback
	D 5-7-0141	Motor Type
	[] P-0-0004	Smoothing Time Constant
	UP-0-0008	Activation E-Stop function
	UP-0-0009	From Message Number

23. Close the Drive Data software, open Walter Windows Mode, and reference the axis with **20**%!! If the reference move goes well and the axis went back home, the upload is finished.

We highly recommend re-qualifying the axis position and the touch probe after a drive exchange!