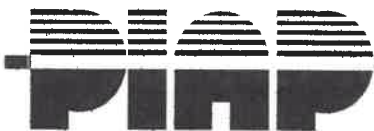


Z A Ł A C Z N I K N r 1



TELEFAX

To:

November 14, 1994

Dipl. Ing. Alfred Tierolf
Robert Bosch GmbH
Berliner Strasse 25
D - 64 701 Erbach, RFN

TELEFAX: (049) (60 62) 78 499 || Number of sheets (including this cover sheet): 5

Ref.: RH03 control system and drive system for robot.

Sir,

I like to inform you that we have already started on the project of development, examination and production in short series of heavy-duty robots with large working envelope and rated handling capacity of 120kg. It is planned to provide them with all drives and overall control system made of Robert Bosch GmbH.

The main aim of this project is to meet the needs in the field of automatization and robotization of polish automotive industry. In particular, these robots are prepared for tending the lines of presses.

As an executive component of this robot we plan to utilise the manipulator body, which was worked out in PIAP within the scheme of other project. Its kinematics and the overall dimensions are shown in appendix 1.

Owing to the high costs, this project is government sponsored and partly financed from its funds. It strongly influences the schedule and imposes the fixed dates of completion of the stages of this project.

With reference to our previous conversations, I assume that you are interested in co-operation in this project. In this connection I would like to know your opinion on following issues:

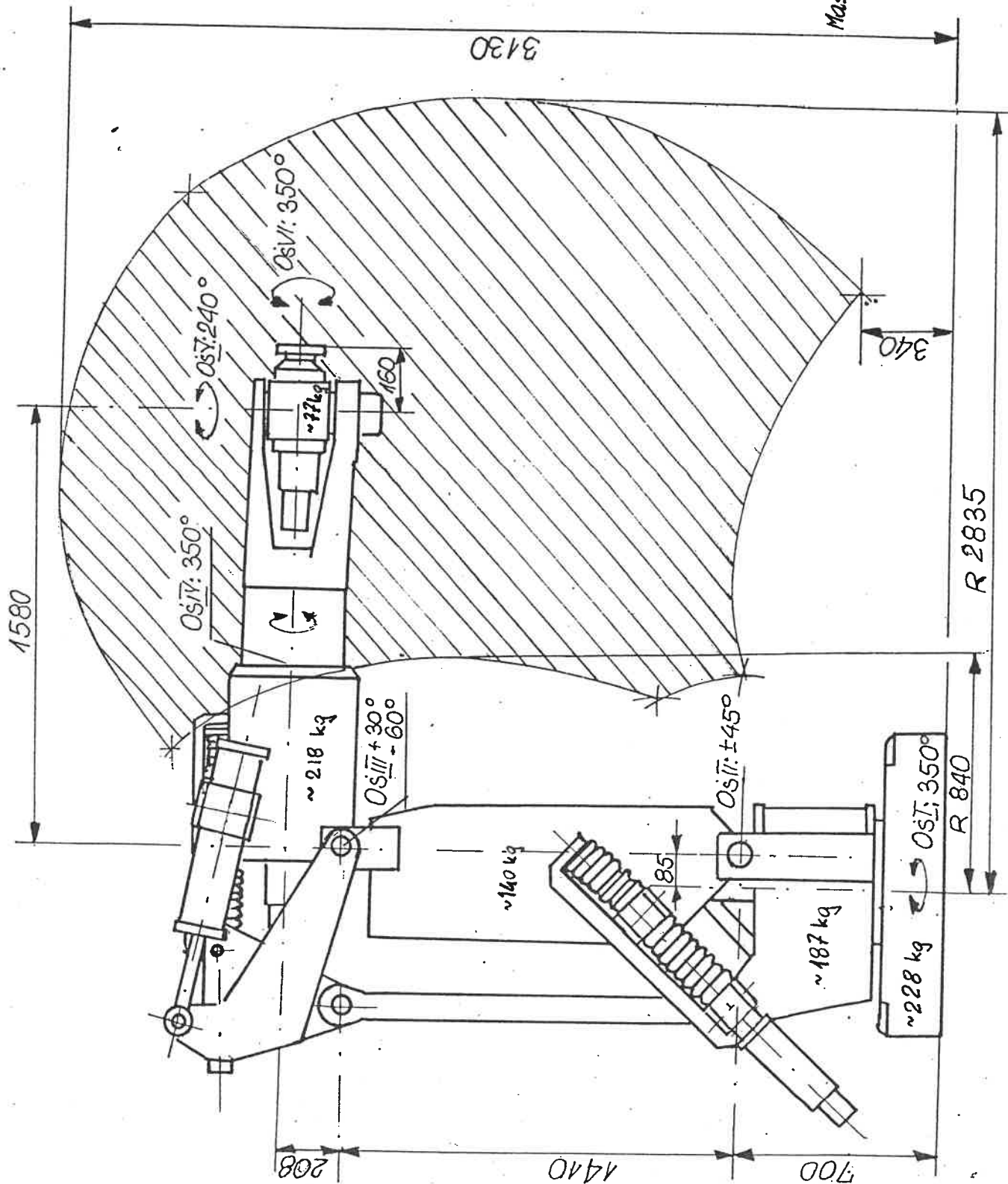
1. Is R. Bosch GmbH capable to sell us the control system RH03, in configuration as it is mentioned in appendix 2, at a discount of 47%?
2. Are you able to borrow us, for the period of 12 months, the complete set of drives according to the list in appendix 3? The decision on the eventual purchase of this set of drives will be taken before the end of this period.
3. We ask for the list of all parameters we should specify for you, which are necessary for the generation of the RH03 control program for this particular design.
4. Furthermore, we ask for your opinion on our preliminary specification of control system as well for your eventual assistance in accurate definition of it.

We expect the delivery of drives in Dec. 94 and the control system in Feb. 95.

Moreover, we would be glad if you appoint a person for our further contacts on technical merits.

Let me have your reply at your earliest convenience.

Yours faithfully



Appendix 2

Steuerungsanlage RHO-3

1. Grundpaket 2 Nr 010020 ohne Servo 3	stu. 1
2. Paket Servo 61 Nr 040090	stu. 1
3. Programmierhandgerät PHG 3 Nr 056693	stu. 1

Appendix 3

Drives, preliminary list

	no of items
1. Motor SE-B4.130.030-04.100	- 1
2. Motor SE-B3.095.060-04.100	- 1
3. Motor SE-B3.075.060-04.100	- 2
4. Motor SE-B3.055.060-04.100	- 1
5. Motor SE-B3.033.060-04.100	- 1
6. Servo module SM 25/50-TC	
order number 107 006 0842	- 3
7. Servo module SM 15/30-TC	
order number 107 006 0841	- 2
8. Servo module SM 10/20-TC	
order number 107 006 0840	- 1
9. Supply module VM 60/R-T	
order number 107 005 4113	- 1
10. Capacitor module KM 1100-T	
order number 107 004 8798	- 1
11. Plug braking module	
order number 107 091 4767	- 1
12. Plug braking module	
order number 107 091 3547	- 3
13. Plug braking module	
order number 107 091 3545	- 1
14. Plug braking module	
order number 107 091 3546	- 1
15. Starting circuit module (size II)	
order number 1070 914 665	- 1
16. Mains choke for VM 60/R-T	
order number 1070 055 003	- 1
17. Diagnostic module (coded) for TC	
order number 1070 060 715	- 3
18. Mounting kit for ROD 426.014 for SE-BS	
order number 1070 915 127	- 5
19. Mounting kit for ROD 426.014 for SE-B4	
order number 1070 914 653	- 1
20. Pulse encoder ROD 426.014-500 pulses/rev	
order number 1070 909 714	- 6
21. ROD encoder matching plug 90	
order number 1070 914 035	- 6
22. Matching plug, tacho 90	
order number 1070 914 036	- 6

- 23. Matching plug, motor, 90
order number 1070 914 039 - 6
- 24. Connection cable for measuring system/tacho
order number 1070 903 499 - 200m
- 25. Assembly adapter for SM-TC
order number 1070 062 300 - 1
- 26. Accessories for combination of TC and KM-T
order number 1070 062 883 - 1
- 27. Contactor 3TB40, 22A (SIEMENS) - 1
- 28. Contactor 3TB44, 55A (SIEMENS) - 1
- 29. Fuses 5SD 460 50A/500V (SIEMENS) - 1