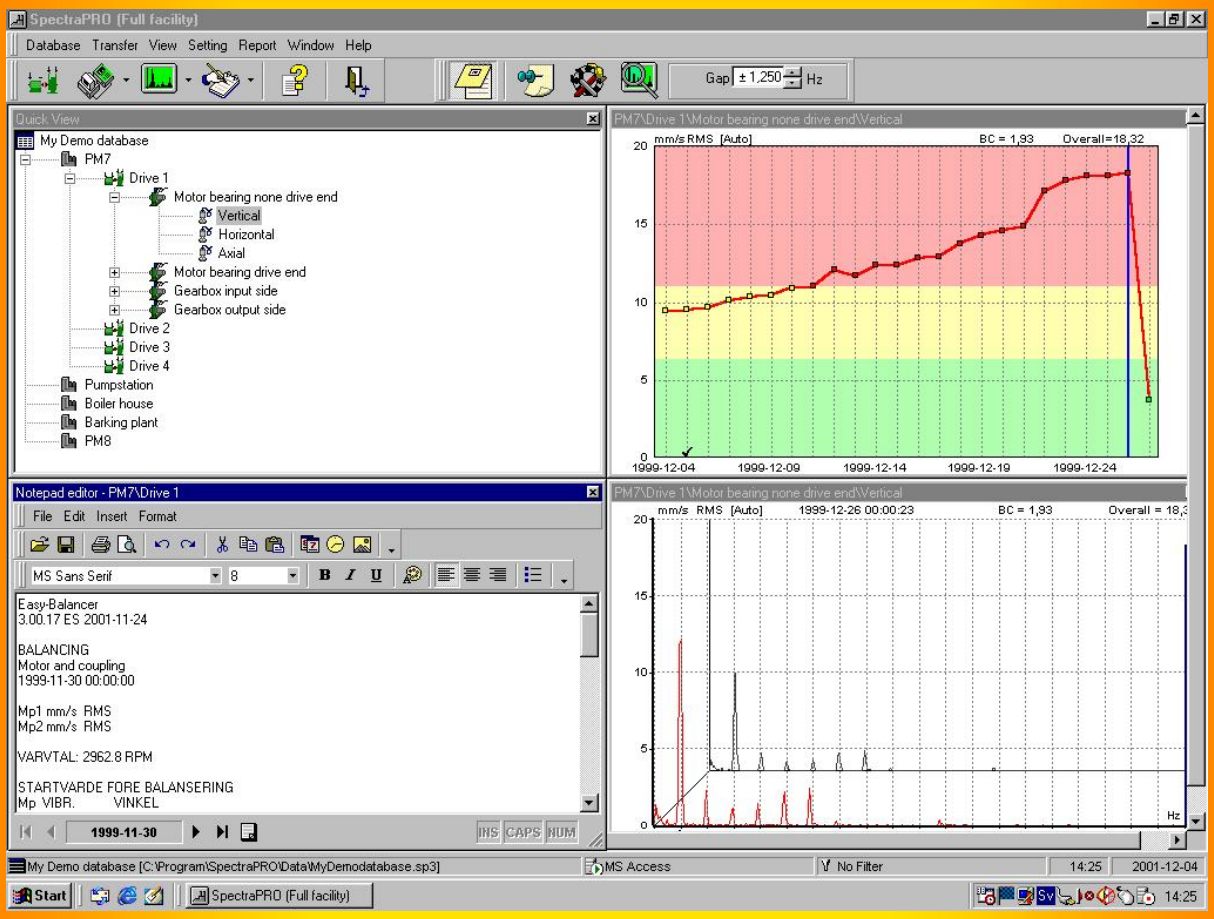
SpectraPro

Analysis program for
Easy-Viber Easy-Balancer
X-Viber VM110



MANUAL

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Data sheet

SpectraPro

Analysis program for
Easy-Viber Easy-Balancer
X-Viber VM110

With:

- **Easy Database design with templates and machine pictures**
  - **Alarm indicators in the database tree**
- **Calculation of machine fault frequencies including a bearing database**
- **Several shaft speed tools at evaluation with**
  - **Speed set in database**
  - **Calculated speed**
  - **Measured speed**
  - **Selected speed**
- **Transfer analysis based on alarm settings and fault frequencies**
- **Note pad for:**
  - **Machine description**
  - **Evaluation results and maintenance actions**
- **Spectrum view options with:**
  - **Quick view**
  - **Spectra from the whole machine**
  - **Selected spectra**
  - **Trend of total and bearing condition levels**
- **Spectrum analysis with:**
  - **Harmonic and side band cursors**
  - **Calculated fault frequencies**
  - **Reference spectra**
  - **On line list with 30 frequencies with the highest levels**
- **Automatic report generators for:**
  - **Job reports**
  - **Machine history reports**
  - **Machine description and machine properties**
  - **Transfer reports**
  - **Spectrum reports with automatic comparison with fault frequencies**
  - **Trend reports**
- **Narrow band analysis**
  - **Analysis of the latest measurements**
  - **Comparison with a reference measurement**
  - **Posibility to create up to 32 bands for every measuring direction from calculated, defined or measured frequences.**
  - **Automatic alarm setting from the reference measurement**

Before Using This Software

System Requirements

The following hardware specifications are required to operate this software.

Hardware

❑ CPU	❑ Pentium (200 MHz) or fasted, is highly recommended
❑ Hard Disk Drive	❑ 200MB or more
❑ Memory	❑ **256 Mbytes** of RAM
❑ Display Adapter	❑ 1024 x 768, 256 colors or more
❑ Printer	❑ Windows compatible, color printer

Note

Pentium CPU is highly recommended.

OS

❑ Windows98 , Windows NT, Windows 2000, Windows Me, Windows XP

Note

❑ This software is a 32-bit application.

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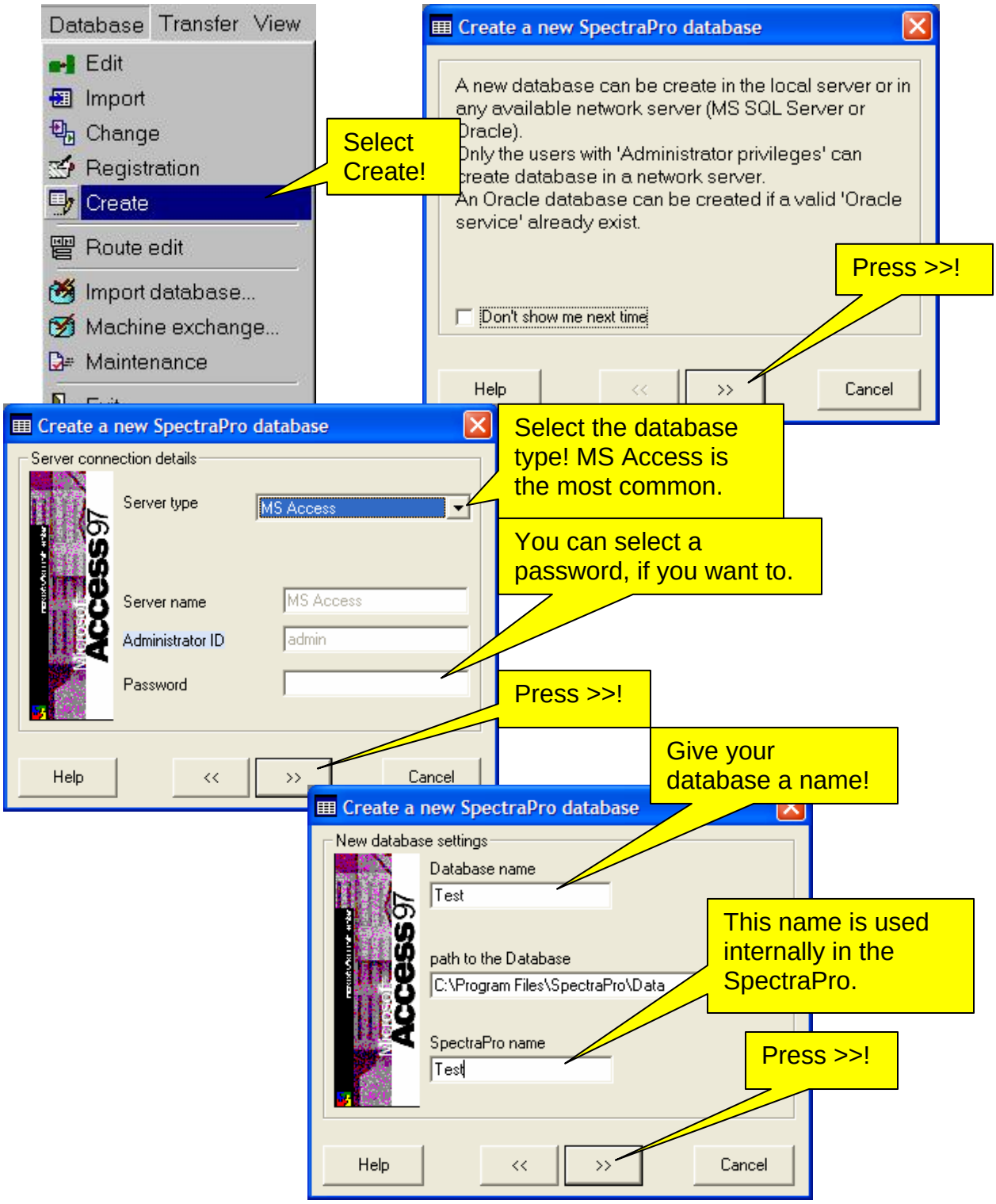
Installing SpectraPro

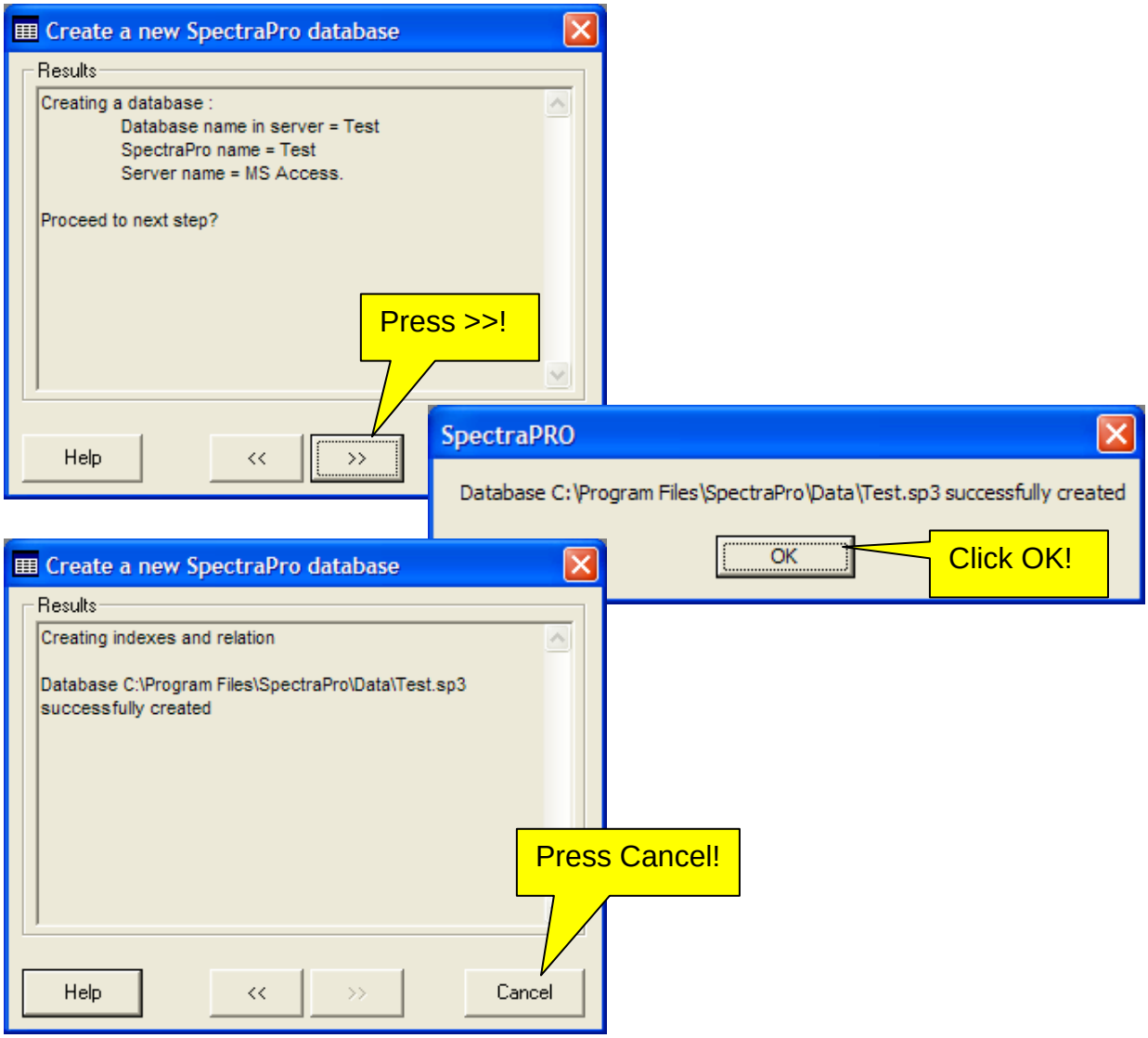
Place the CD in your computer and the Autorun function will open the following window:

If you don't have any old installation of SpectraPro on this computer, click Install SpectraPro! Follow the instruction from the screen!
If you have installed SpectraPro on this computer before, then click Install Service Pack! Follow the instructions from the screen!
For the most common used database format MS Access you don't need to install the MSDE.

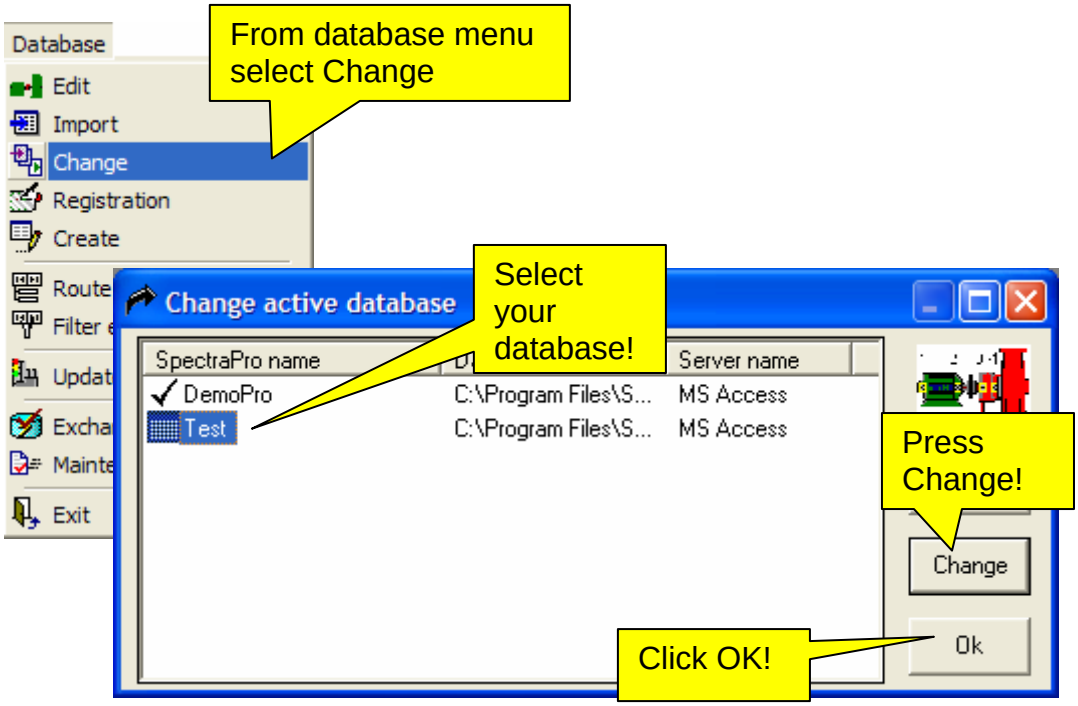
Creating a database

Start the SpectraPro program!

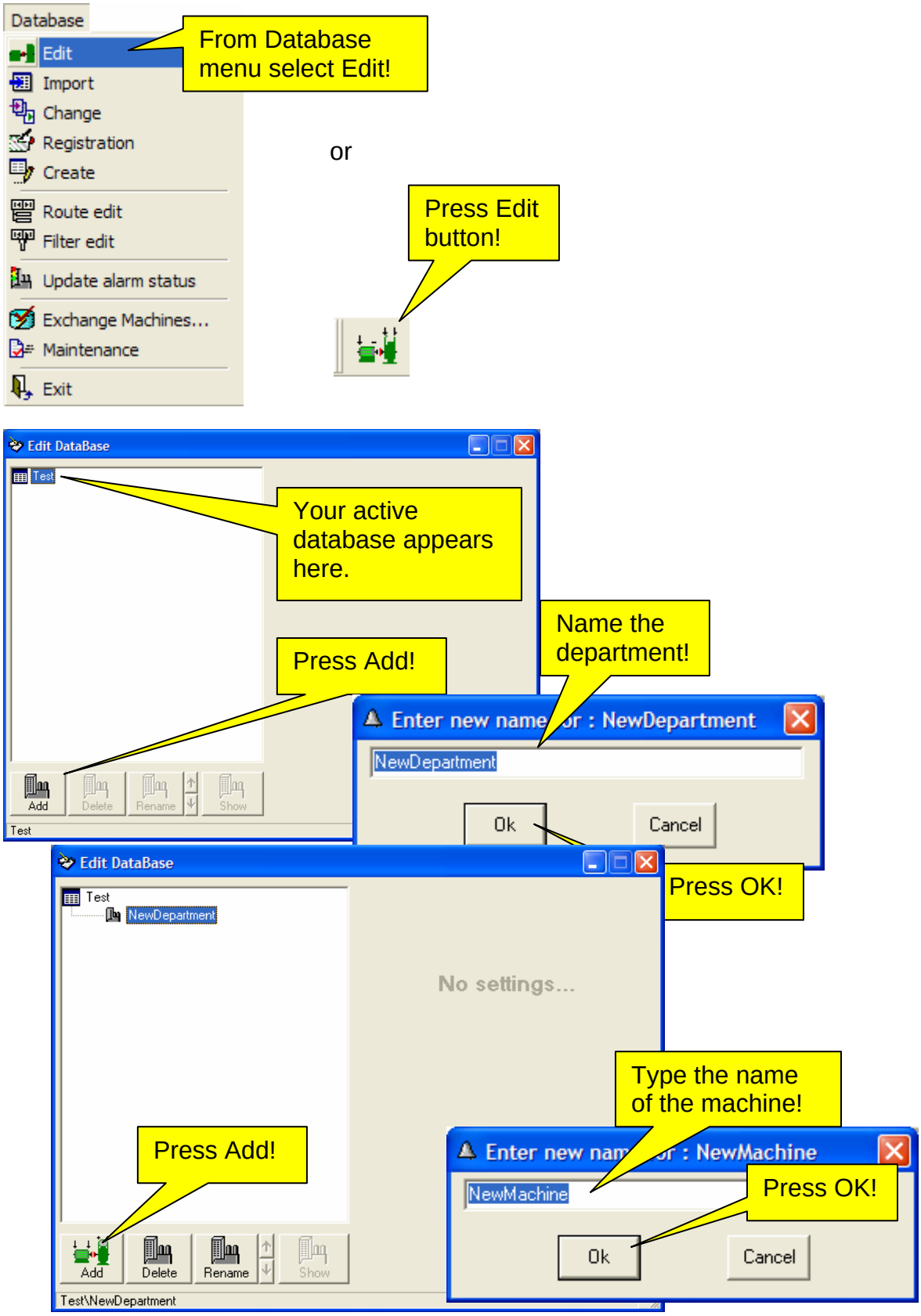


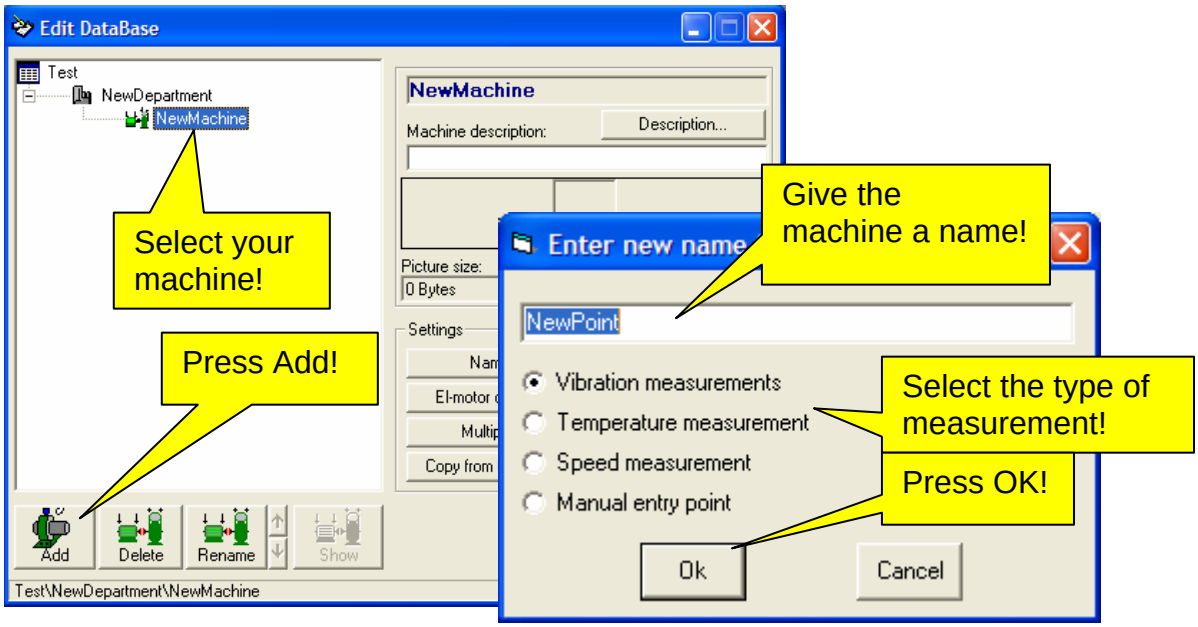


Now the database is created and registrated. Now you need to change the actual database.

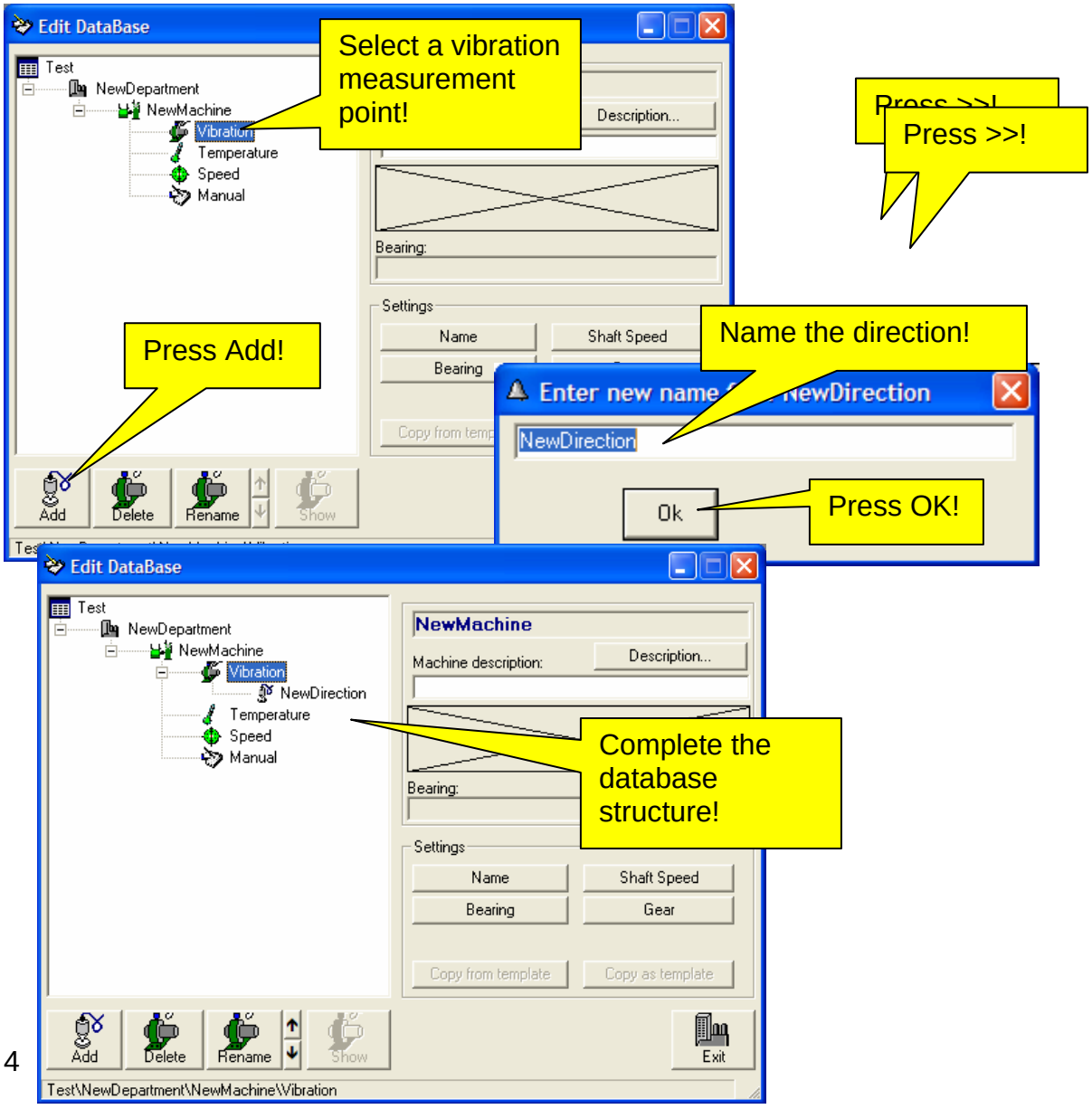


Creating the database structure

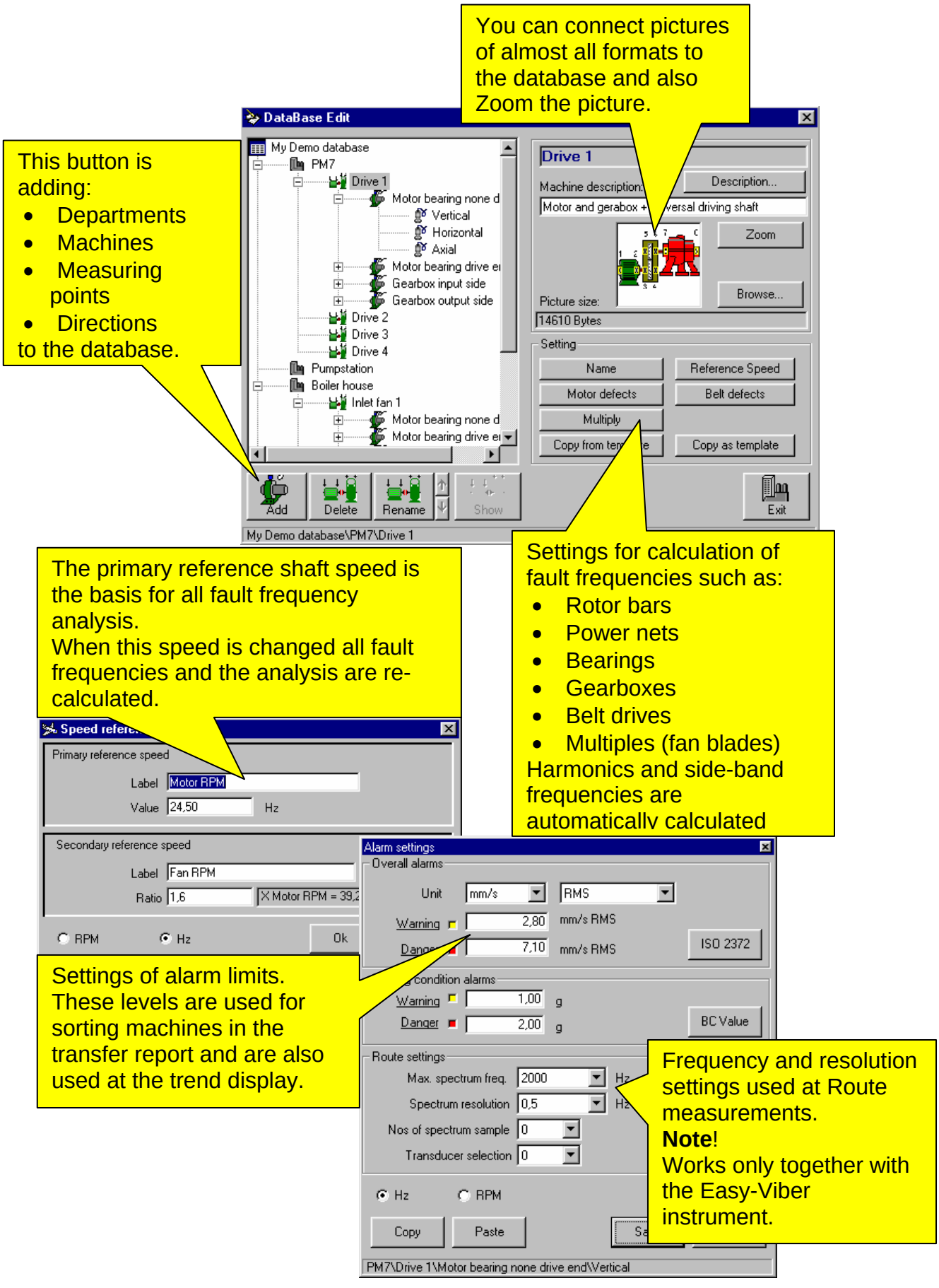




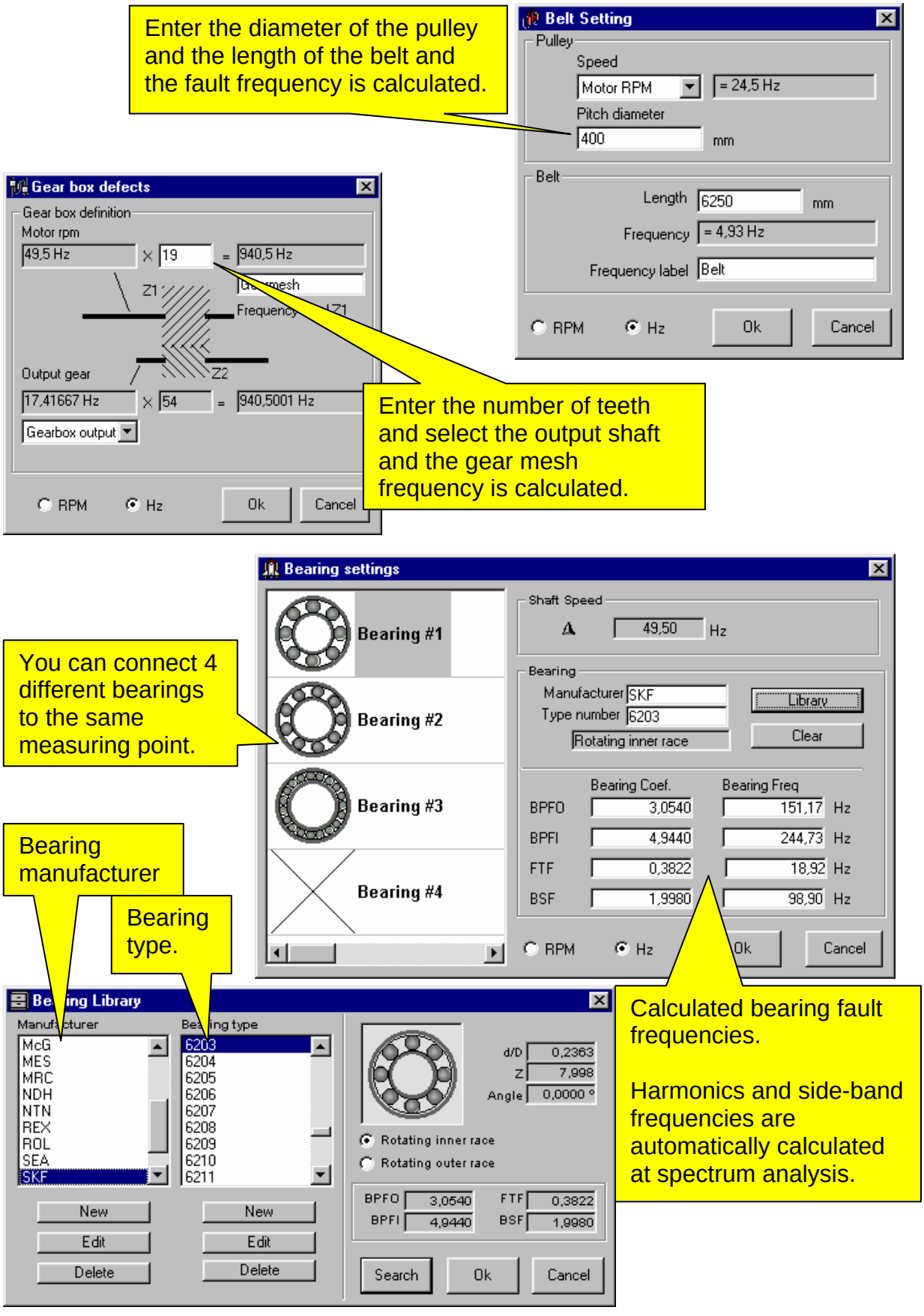
A vibration measurement point needs at least one direction.



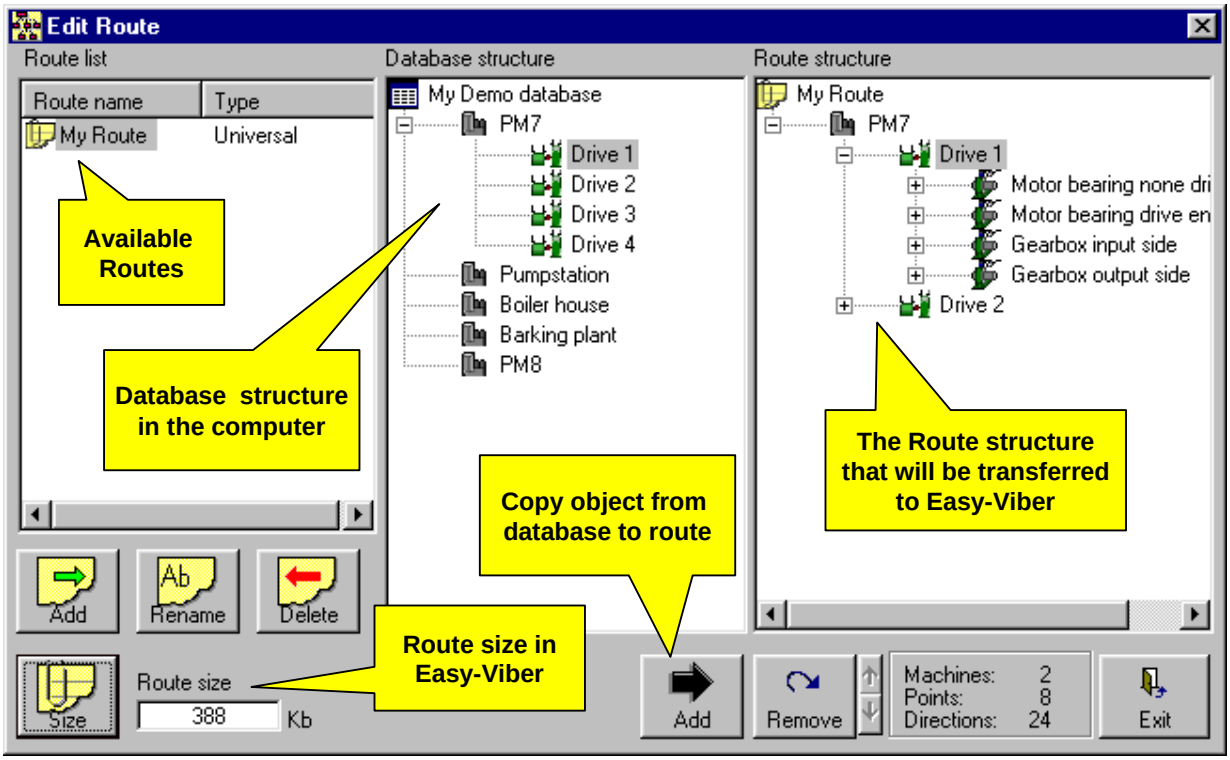
Database structure not only mackines and points



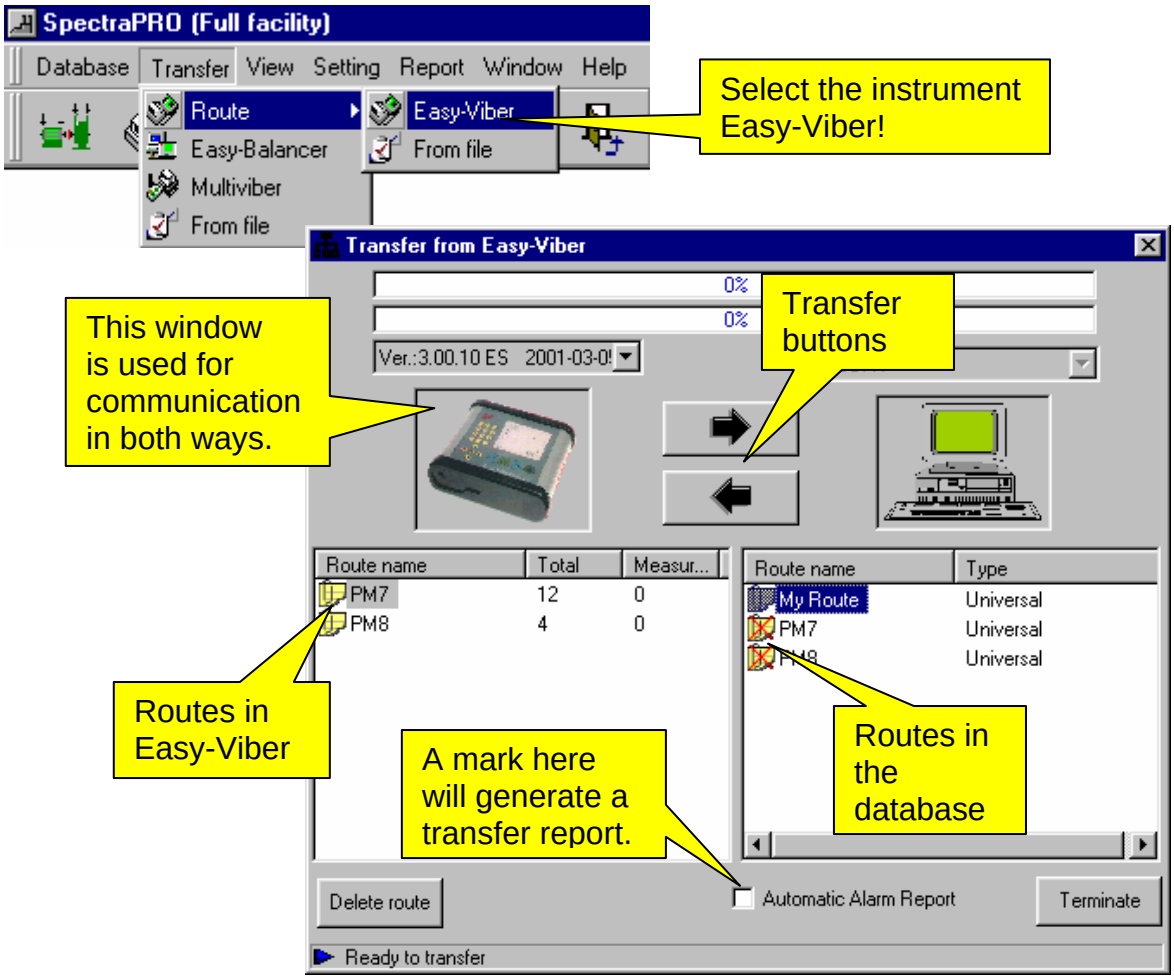
Calculation of mechanical fault frequencies



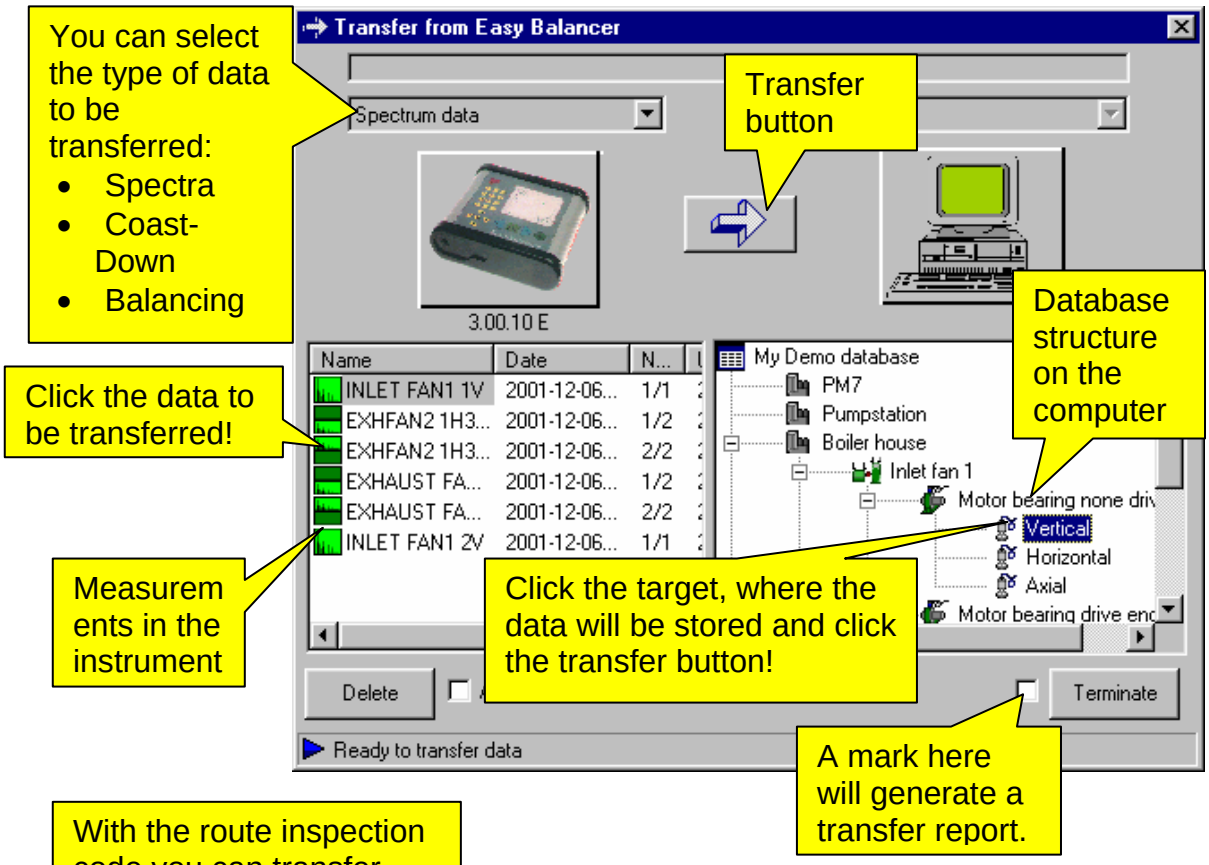
Creating a Route



Instrument communication, Route transfer, only with Easy-Viber.



Transfer of a single spectrum and other information from Easy-Viber and Easy-Balancer to the SpectraPro program



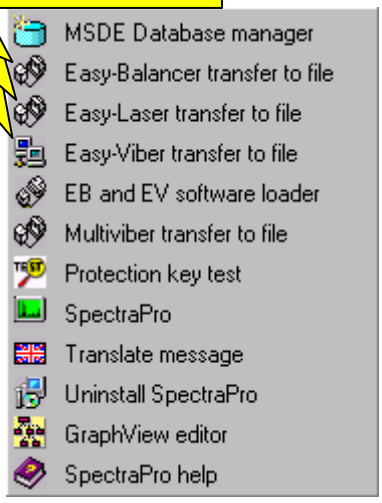
With the route inspection code you can transfer both text messages and pre-made messages from the instrument to the computer.

Route ...tion code

Code no.	Description
1	Bearing temp
2	Bearing leakage
3	Hot bearing
4	Bearing noise
5	
6	Hot sealing
7	Seal leakage
8	Seal noise
9	
10	
11	Water temp
12	Water leakage
13	Water pressure
14	0
15	0

Print Exit

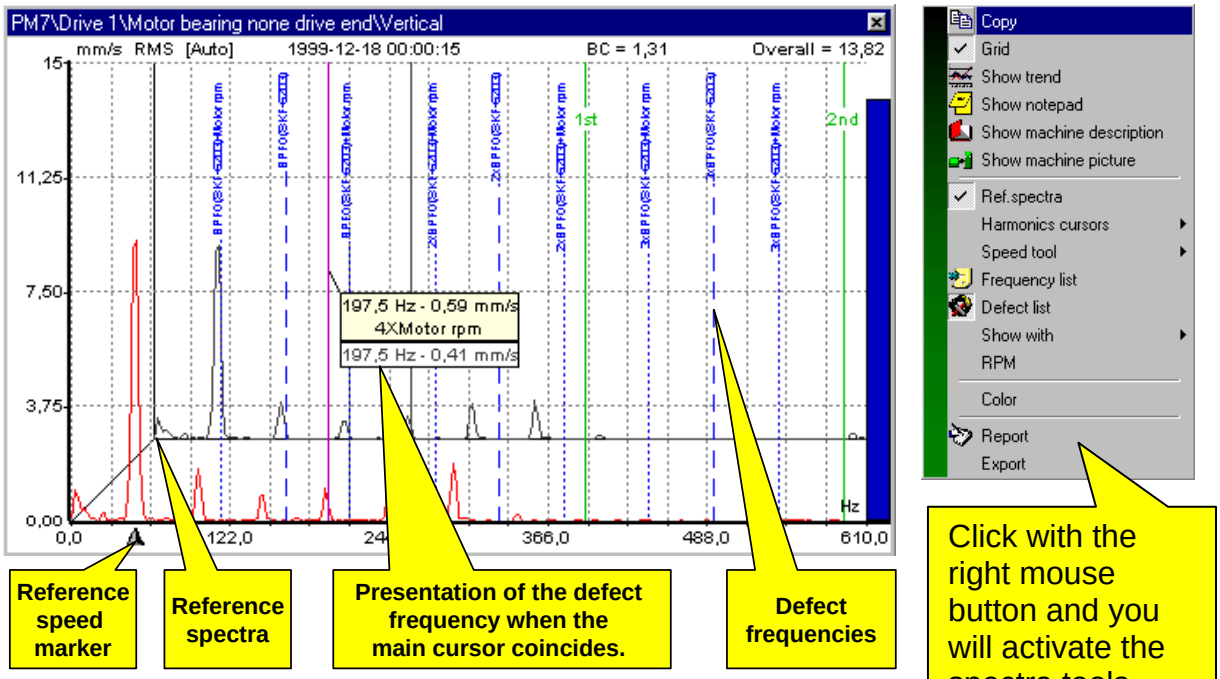
In the SpectraPro menu there are three different program parts for loading data to a file for later transfer to the database or for emailing.



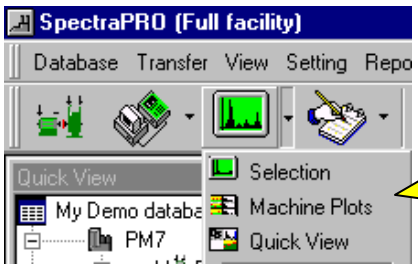
Analysing a spectrum with SpectraPro

A spectrum can be viewed in many sizes and with help functions such as referens spectra, harmonic and side band cursors and defect cursors.

When the referens speed marker is moved the defect cursors are re-calculated.



Click with the right mouse button and you will activate the spectra tools window.

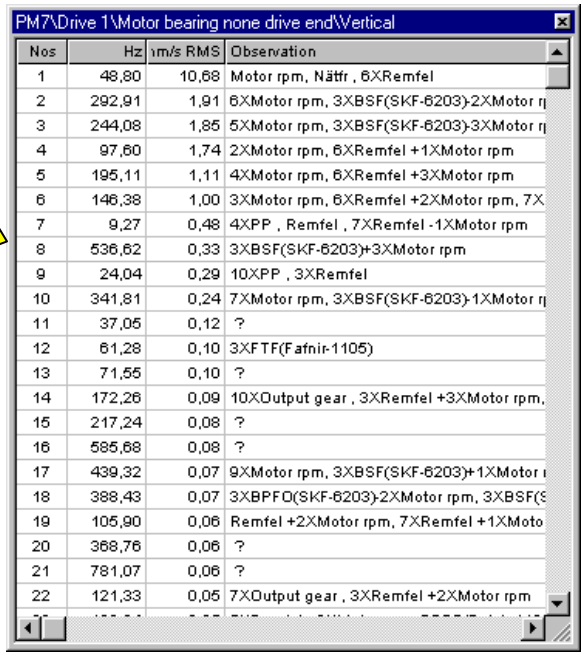


You can of cause view the spectra in many ways:

- Selected spectra from the whole database.
- All spectra from a whole machine.
- Database tree, trend, spectra and notebook.

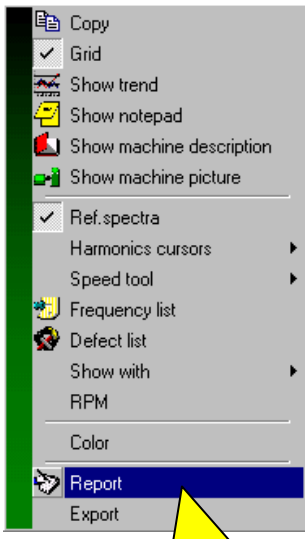
Quick analysis
Instead of analysing each frequency in the spectra you can use the window with the 30 highest peaks with automatic:

- Sorting with the highest levels first.
- Estimation of correct peak level and frequency.
- Comparison between the spectra frequencies and the calculated fault frequencies.
- The fault frequency labels will be presented for all frequencies that coincide.



Nos	Hz	m/s RMS	Observation
1	48,80	10,68	Motor rpm, Nätfr , 6XRemfel
2	292,91	1,91	6XMotor rpm, 3XBSF(SKF-6203)-2XMotor r
3	244,08	1,85	5XMotor rpm, 3XBSF(SKF-6203)-3XMotor r
4	97,60	1,74	2XMotor rpm, 6XRemfel +1XMotor rpm
5	195,11	1,11	4XMotor rpm, 6XRemfel +3XMotor rpm
6	146,38	1,00	3XMotor rpm, 6XRemfel +2XMotor rpm, 7X
7	9,27	0,48	4XPP , Remfel , 7XRemfel -1XMotor rpm
8	536,62	0,33	3XBSF(SKF-6203)+3XMotor rpm
9	24,04	0,29	10XPP , 3XRemfel
10	341,81	0,24	7XMotor rpm, 3XBSF(SKF-6203)-1XMotor r
11	37,05	0,12	?
12	61,28	0,10	3XFTF(Fafnir-1105)
13	71,55	0,10	?
14	172,26	0,09	10XOutput gear , 3XRemfel +3XMotor rpm,
15	217,24	0,08	?
16	585,68	0,08	?
17	439,32	0,07	9XMotor rpm, 3XBSF(SKF-6203)+1XMotor r
18	388,43	0,07	3XBPFO(SKF-6203)-2XMotor rpm, 3XBSF(S
19	105,90	0,06	Remfel +2XMotor rpm, 7XRemfel +1XMoto
20	368,76	0,06	?
21	781,07	0,06	?
22	121,33	0,05	7XOutput gear , 3XRemfel +2XMotor rpm

Automatic report generators



Click with the right mouse button and select Report!

With the spectra window active the report generator will automatically create this report with the selected Spectra and the Quick analysis in the same report.

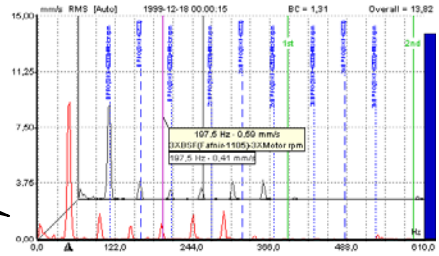
With the design Editor the user can change the design of all the report documents and also add their own logo.

A click on the Word icon will utomatically open the Windows Word program and paste this as a word document that can be edited as a normal Word document.

SPECTRA REPORT

PM7\Drive 1\Motor bearing none drive end\Vertical

Collected :den 18 december 1999 00:00
Total value = 13,82 mm/s RMS
BC = 1,31
Shaft Speed=48,80 Hz

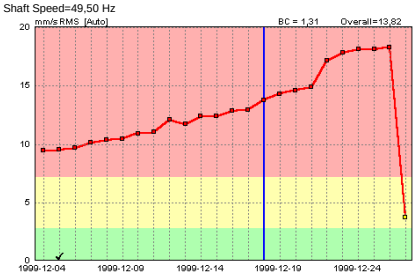


Nos	Frequency (Hz)	mm/s RMS	Observation(+/-1,25 Hz)
1	48,80	10,68	Motor rpm, Nätfr , 6XRemfel
2	292,91	1,91	6XMotor rpm, 3XBSF(SKF-6203)-2XMotor rpm
3	244,08	1,85	5XMotor rpm, 3XBSF(SKF-6203)-3XMotor rpm
4	97,60	1,74	2XMotor rpm, 6XRemfel +1XMotor rpm
5	195,11	1,11	4XMotor rpm, 6XRemfel +3XMotor rpm
6	146,38	1,00	3XMotor rpm, 6XRemfel +2XMotor rpm, 7XFTF(Fafnir-1105)
7	9,27	0,48	4XPP , Remfel , 7XRemfel -1XMotor rpm
8	536,62	0,33	3XBSF(SKF-6203)+3XMotor rpm
9	24,04	0,29	10XPP , 3XRemfel
10	341,81	0,24	7XMotor rpm, 3XBSF(SKF-6203)-1XMotor rpm
11	37,05	0,12	
12	61,28	0,10	3XFTF(Fafnir-1105)
13	71,55	0,10	
14	172,26	0,09	10XOutput gear , 3XRemfel +3XMotor rpm, 9XRemfel +2XMotor rpm, 6XFTF(SKF-6203)
15	217,24	0,08	
16	585,68	0,08	
17	439,32	0,07	9XMotor rpm, 3XBSF(SKF-6203)+1XMotor rpm
18	388,43	0,07	3XBPFO(SKF-6203)-2XMotor rpm, 3XBSF(SKF-6203)
19	105,90	0,06	Remfel +2XMotor rpm, 7XRemfel +1XMotor rpm, BPFI(Fafnir-1105)-3XMotor rpm, 5XFTF(SKF-2211)
20	368,76	0,06	
21	781,07	0,06	
22	121,33	0,05	7XOutput gear , 3XRemfel +2XMotor rpm
23	186,64	0,05	5XRemfel +3XMotor rpm, BPFO(Fafnir-1105), 9XFTF(Fafnir-1105)
24	306,50	0,05	BPFO(SKF-2211)-2XMotor rpm
25	418,78	0,05	
26	553,22	0,05	2XBPFI(Fafnir-1105)+1XMotor rpm
27	180,49	0,05	4XRemfel +3XMotor rpm, 10XRemfel +2XMotor rpm, BPFI(SKF-6203)-1XMotor rpm, 2XBSF(Fafnir-1105)-1XMotor rpm, BSF(SKF-2211)
28	401,34	0,05	
29	85,26	0,05	5XOutput gear , 3XFTF(SKF-6203), 4XFTF(SKF-2211)
30	268,26	0,04	

Trend report

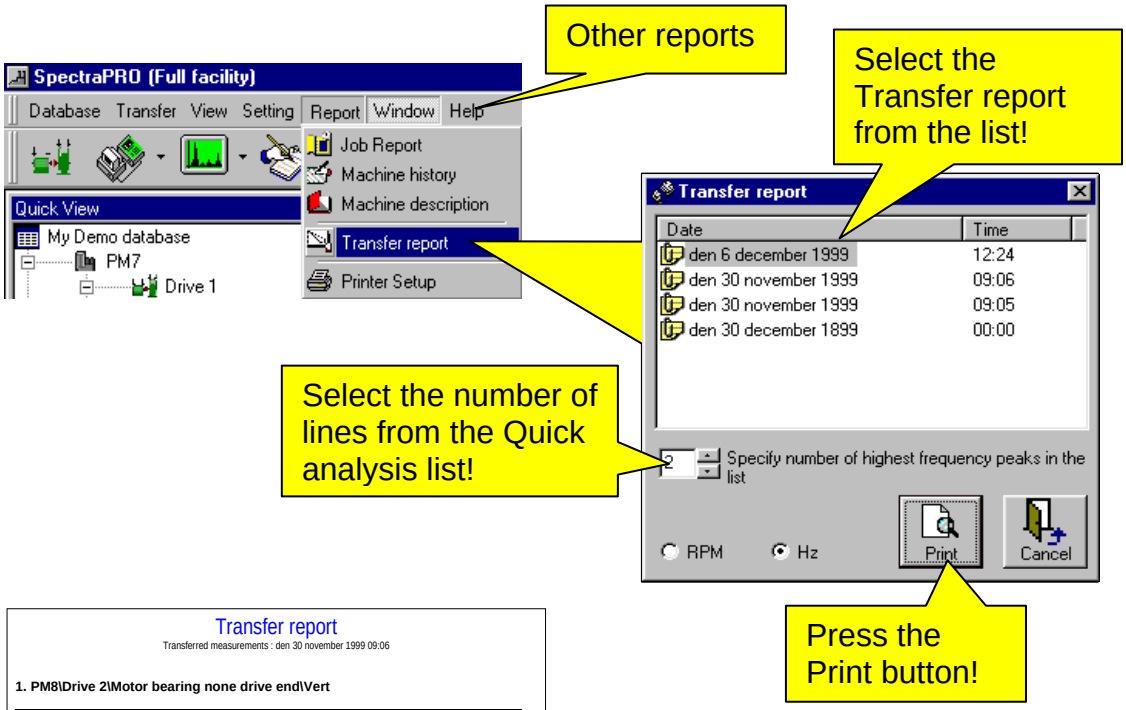
PM7\Drive 1\Motor bearing none drive end\Vertical

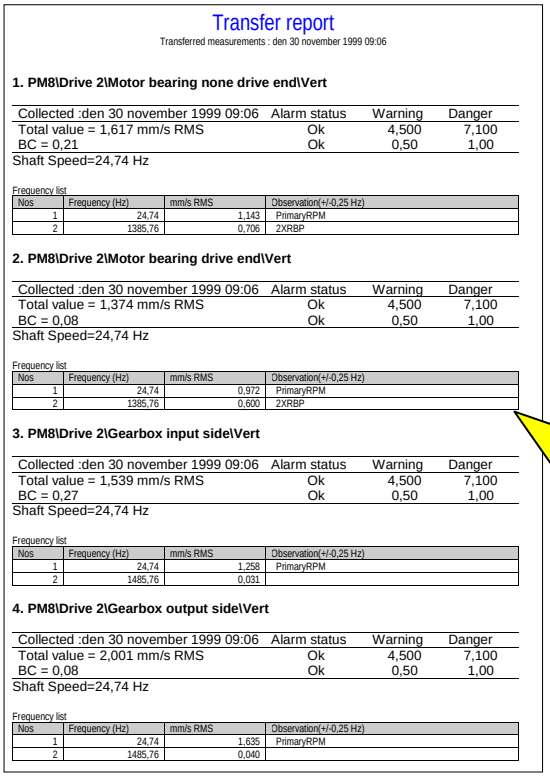
Shaft Speed=49,50 Hz



Nos	Measuring date	mm/s RMS	Alarm status	BC	Alarm status
1	04/12 1999 12:00	9,46	Danger	0,10	Ok
2	05/12 1999 12:00	9,56	Danger	0,23	Ok
3	06/12 1999 12:00	9,71	Danger	0,28	Ok
4	07/12 1999 12:00	10,15	Danger	0,37	Ok
5	08/12 1999 12:00	10,39	Danger	0,46	Ok
6	09/12 1999 12:00	10,50	Danger	0,50	Ok
7	10/12 1999 12:00	10,95	Danger	0,66	Ok
8	11/12 1999 12:00	11,08	Danger	0,70	Ok
9	12/12 1999 12:00	12,13	Danger	0,81	Ok
10	13/12 1999 12:00	11,76	Danger	0,88	Ok
11	14/12 1999 12:00	12,43	Danger	0,98	Ok
12	15/12 1999 12:00	12,43	Danger	1,05	Warning
13	16/12 1999 12:00	12,86	Danger	1,10	Warning
14	17/12 1999 12:00	12,97	Danger	1,20	Warning
15	18/12 1999 12:00	13,82	Danger	1,31	Warning
16	19/12 1999 12:00	14,33	Danger	1,34	Warning
17	20/12 1999 12:00	14,62	Danger	1,48	Warning
18	21/12 1999 12:00	14,89	Danger	1,52	Warning
19	22/12 1999 12:00	17,14	Danger	1,61	Warning
20	23/12 1999 12:00	17,81	Danger	1,69	Warning
21	24/12 1999 12:00	18,14	Danger	1,81	Warning
22	25/12 1999 12:00	18,14	Danger	1,89	Warning
23	26/12 1999 12:00	18,32	Danger	1,93	Warning
24	27/12 1999 12:00	3,79	Warning	0,20	Ok

With the trend window active the report generator will automatically create this report with the selected Trend diagram and a list of all the measurements in the same report.





Transfer report

Transferred measurements : den 30 november 1999 09:06

1. PM8\Drive 2\Motor bearing none drive end\Vert

Collected :den 30 november 1999 09:06	Alarm status	Warning	Danger
Total value = 1,617 mm/s RMS	Ok	4,500	7,100
BC = 0,21	Ok	0,50	1,00

Shaft Speed=24,74 Hz

Frequency list

Nos	Frequency (Hz)	mm/s RMS	Observation(+/-0,25 Hz)
1	24,74	1,143	PrimaryRPM
2	1385,76	0,706	2XRBP

2. PM8\Drive 2\Motor bearing drive end\Vert

Collected :den 30 november 1999 09:06	Alarm status	Warning	Danger
Total value = 1,374 mm/s RMS	Ok	4,500	7,100
BC = 0,08	Ok	0,50	1,00

Shaft Speed=24,74 Hz

Frequency list

Nos	Frequency (Hz)	mm/s RMS	Observation(+/-0,25 Hz)
1	24,74	0,972	PrimaryRPM
2	1385,76	0,600	2XRBP

3. PM8\Drive 2\Gearbox input side\Vert

Collected :den 30 november 1999 09:06	Alarm status	Warning	Danger
Total value = 1,539 mm/s RMS	Ok	4,500	7,100
BC = 0,27	Ok	0,50	1,00

Shaft Speed=24,74 Hz

Frequency list

Nos	Frequency (Hz)	mm/s RMS	Observation(+/-0,25 Hz)
1	24,74	1,258	PrimaryRPM
2	1485,76	0,031	

4. PM8\Drive 2\Gearbox output side\Vert

Collected :den 30 november 1999 09:06	Alarm status	Warning	Danger
Total value = 2,001 mm/s RMS	Ok	4,500	7,100
BC = 0,08	Ok	0,50	1,00

Shaft Speed=24,74 Hz

Frequency list

Nos	Frequency (Hz)	mm/s RMS	Observation(+/-0,25 Hz)
1	24,74	1,635	PrimaryRPM
2	1485,76	0,040	

The Transfer report gives a quick overview of all the transferred spectra.
A Transfer report contains information about.

- Date and time of the measurement
- Total vibration level with a comparison with alarm limits.
- Bearing condition level with a comparison with alarm limits.
- Quick analysis.

Of cause there exists more reports that can not be mentioned

Hardware requirements:
CPU: Pentium 200 MHz or faster
Hard disk: 500Mb or more
Memory: 32Mb or more
Display: 1024x768, 256 colours or more
Printer: Windows compatible
Serial port for instrument communication

SpectraPro works with the following operating systems:
Windows 95, 98, NT4.0, ME, 2000 and XP
This is a 32 bit application