



Product Managers Information News

1. Miracel door change

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File: RBS_Miracel door change_E_05_2008.ppt

Existing P-Online of BU Rack and Bus Systems :

01/03: mounting screws	06/06: Change of fan set EMC Rack Miracel (double pannelled)
02/03: DI-Strip Netpower	07/06: Runout Telescopic Slides
03/03: Power distribution	08/06: New Power Distribution Unit
04/03: Fan cover	09/06: Heavy-Duty Shelf 01.102.030.1 not longer available
01/04: Solid bearing slide	10/06: NEWS smaract
02/04: New UPS notation	11/06: New USP systems
03/04: Price reduction wall-mounting enclosure ConAct	12/06: Cable cantilever girder three-part 05.040.095.0
04/04: New PDUs for high power supply in racks	01/07: SoHo Wallbox
05/04: Jumper bracket	02/07: Competitive comparison enclosures
06/04: TFT-Fixed installation	03/07: SoHo Wallbox further on available
07/04: TFT drawer	04/07: Cold Aisle Containment
08/04: Accessories in .8	05/07: New UPS kits
01/05: Mounting sets	06/07: New chassis runners
02/05: DI-Strip PDU switch cover	07/07: Air intake fan unit
03/05: News SMARACT (Delivery time / T1000)	08/07: MicroTCA Chassis for Emerson
04/05: Cable routing board	09/07: RMS compact Soft´ware under Linux
05/05: GST18 connector system	10/07: CAC-application report
06/05: fan units	11/07: RBS_Pricing Miracel PLUS
07/05: TFT drawer	12/07: RBS_Productnews and service @lock_E_11_2007
08/05: Intelligent PDU	13/07: Aluminium 19" Front Panel
09/05: Top cover CoolBlast	14/07: Blanking Panel Quick Fix
10/05: Certification PDUs	15/07: Power Trans
11/05: EMC miracel, ROHS	16/07: Koldlok
12/05: New miracel fancover becomes standard supply in miracel network racks	17/07: Product news RMS compact
01/06: Cable cantilever girder	18/07: New plastic hinges for Miracel racks
02/06: Filter fan in RAL 7035	01/08: Price reduction Koldlok products
03/06: Fan unit ConAct	02/08: RMScompactII
04/06: Design trim Miracel	03/08: CoolFlex Application Reports
05/06: C-shaped runner	04/08: CoolFlex Early fire detection and fire extinction

New standards for doors



Dear Ladies and Gentlemen,

Knürr utilizes new technologies in door production process. From end of July 2008, we're going from current door production process to the new adhesive bond technology, which is known from automobile industry.

The Adhesive bond technology is used for applications in steel and glass doors. Thereby for bonding of stiffening frame to steel or perforated doors. On the other hand the glass will bond on glass door frame (Page 4, fig. 1).

Defined targets with this technology are:

- increase of customer's benefit
- keeping and extension of Knürr-Quality-Standards.

Your alignments are:

- selling new doors
- communicate this to customers
- implemantation of change with appropriate arguments.

Take more information from next pages.

NOTES

Article numbers

Quality criteria and customer's benefit



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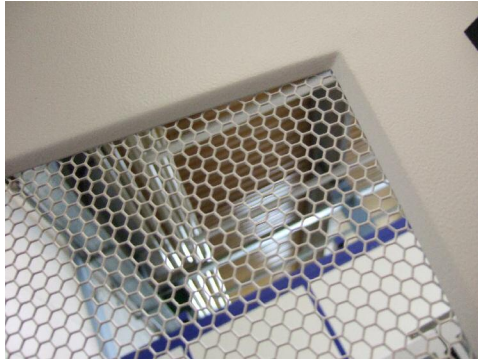
- 10% more perforation
→ **more airflow into the rack**
- Frame is smaller, less protrude into the rack
→ **more place for cabling**
- Less weight
→ **Better handling of doors**
- Improved stiffness.

The new door is/are without:

- a design edge
- no mounting holes on stiffening frame (fig.1).

Fig. 1 Current doors and new doors

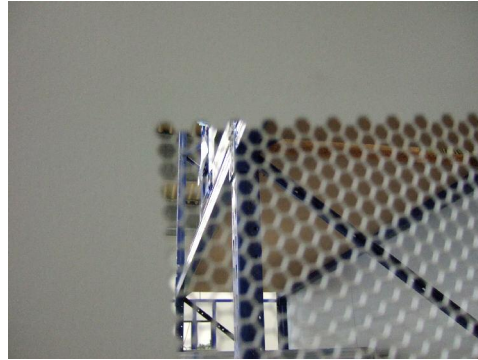
Current door



Representing perforated door and glassdoor with 30° design edge.



New door



Representing new doors: Perforated door and glass-door without 30° design edge.



Fig. 1 Current doors and new doors

Current door



Representing steel- and glassdoor: Holes as mounting possibilities



New door



Representing new doors: Doors without holes. Thus without mounting possibilities



Quality criteria and customer's benefit



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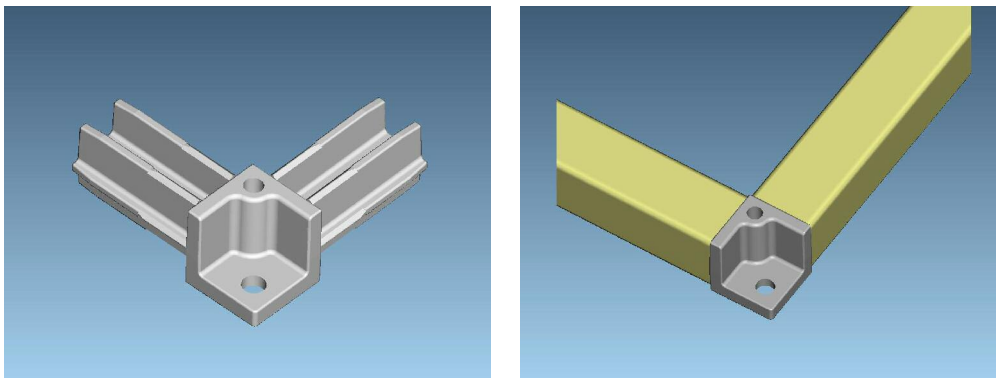
Keeping of high stiffness with an optimum of production process

Stiffening frame made of corner piece and square tube frame bond on steel and perforated doors like in **fig.2**.

High standard comes true through bonding of hut stiffer parts on only one (door-) platines.

The adhesive bond facilitate a vibration isolation.

fig.2.



Tests and Certifications

External and internal tests are reflecting our claims:

External test

- In according to manufacturer instructions the adhesive bond is suitable for middle and high volume production. The industrial application temperatures range from -40°C to +90°C. The tensile strength with 7N/mm² and tensile strength break with above 450% are reliable values for Knürr-Adhesive bonds. For door applications are necessary a maximum value of 0,075 N/mm² for tensile strength and tensile transverse resistance. The manufacturer instruction gives a value with 4 N/mm² for tensile transverse resistance. A plastic deformation for adhesive bond is also impossible.

- Adhesive controls on important surfaces has been made as follows:

Significant basis conditions	Tests	Results
Preliminary purification on surface with an activator and as follows 10 minutes flash-off time	Adhesion control depending on DIN 50014, after 7 days storage under common temperature (23°/ 50%rh)	Glass/Laquer: Kohesion is good Square pipe/Laquer: Kohesion is good
Preliminary purification on surface with an activator and as follows 10 minutes flash-off time	Adhesion control after 7 days storage under warmness/dampness (70°C/100% humidness) + as follows 2 h storage under common temperature (23°C/50% humidness)	Glass/Laquer: Kohesion is good Square pipe/Laquer: Kohesion is good

Internal test

- Vibration and shock tests have been made for complete rack.
Thus for adhesive bond was the test and function well.

Significant basis conditions	Tests depending on	Results
Full rack with 700 kg weights and package	Drop test: Loaded rack is being drop down 10 times from 15 cm high distance.	No damage
Full rack with 650 kg weights and package	Vibration test: During 45 minutes loaded rack is being under vibration with 2-200 Hz.	No damage

Change of current doors through new doors



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- **Saleable doors, catalogue items**
New door version has a new article number. The order entry goes with the new article number.
You find the new article numbers as Notes on pages 10-12.
- **Standard racks**
New doors are entered to the BOM. Racks keep their partnumber.
- **Clarify of current customer projects/ Being under way with customers (Sales and Customer Engineering)**
 - Communicate the change to customers
 - Explain customer benefits with the new door
 - Send a sample by customer requirements
 - Explain cognizable differences to customers.

NOTES: FIND THE ARTICLE NUMBERS ON PAGES 10-12

Notes

Perforated doors



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OLD Article no.	NEW Article no.	Door name	Supply schedule	Measures
01128550X	01148725X	door perforated	complete	H1200xW 600
01128551X	01148726X	door perforated	complete	H1200xW 700
01128552X	01148727X	door perforated	complete	H1200xW 800
01128553X	01148728X	door perforated	complete	H1200xW 900
01128554X	01148729X	door perforated	complete	H1400xW 600
01128555X	01148730X	door perforated	complete	H1400xW 700
01128556X	01148731X	door perforated	complete	H1400xW 800
01128557X	01148732X	door perforated	complete	H1400xW 900
01128558X	01148733X	door perforated	complete	H1600xW 600
01128559X	01148734X	door perforated	complete	H1600xW 700
01128560X	01148735X	door perforated	complete	H1600xW 800
01128561X	01148736X	door perforated	complete	H1600xW 900
01128562X	01148737X	door perforated	complete	H1800xW 600
01128563X	01148738X	door perforated	complete	H1800xW 700
01128564X	01148739X	door perforated	complete	H1800xW 800
01128565X	01148740X	door perforated	complete	H1800xW 900
01128566X	01148741X	door perforated	complete	H2000xW 600
01128567X	01148742X	door perforated	complete	H2000xW 700
01128568X	01148743X	door perforated	complete	H2000xW 800
01128569X	01148744X	door perforated	complete	H2000xW 900
01128570X	01148745X	door perforated	complete	H2200xW 600
01128571X	01148746X	door perforated	complete	H2200xW 700
01128572X	01148747X	door perforated	complete	H2200xW 800
01128573X	01148748X	door perforated	complete	H2200xW 900
	01148749X	door perforated	complete	H2400xW 600
	01148751X	door perforated	complete	H2400xW 800

Notes

closed steel doors



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OLD Article no.	NEW Article no.	Door name	Supply schedule	Measures
01139306X	01148825X	door closed	complete	H1200xW600
01139307X	01148826X	door closed	complete	H1200xW700
01139308X	01148827X	door closed	complete	H1200xW800
01139309X	01148828X	door closed	complete	H1200xW900
01139310X	01148829X	door closed	complete	H1400xW600
01139311X	01148830X	door closed	complete	H1400xW700
01139312X	01148831X	door closed	complete	H1400xW800
01139313X	01148832X	door closed	complete	H1400xW900
01139314X	01148833X	door closed	complete	H1600xW600
01139315X	01148834X	door closed	complete	H1600xW700
01139316X	01148835X	door closed	complete	H1600xW800
01139317X	01148836X	door closed	complete	H1600xW900
01139318X	01148837X	door closed	complete	H1800xW600
01139319X	01148838X	door closed	complete	H1800xW700
01139320X	01148839X	door closed	complete	H1800xW800
01139321X	01148840X	door closed	complete	H1800xW900
01139322X	01148841X	door closed	complete	H2000xW600
01139323X	01148842X	door closed	complete	H2000xW700
01139324X	01148843X	door closed	complete	H2000xW800
01139325X	01148844X	door closed	complete	H2000xW900
01139326X	01148845X	door closed	complete	H2200xW600
01139327X	01148846X	door closed	complete	H2200xW700
01139328X	01148847X	door closed	complete	H2200xW800
01139329X	01148848X	door closed	complete	H2200xW900

Notes

Glass doors



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OLD Article no.	NEW Article no.	Door name	Supply schedule	Measures
01139426X	01148930X	glassdoor	complete	H1200xW600
01139427X	01148931X	glassdoor	complete	H1200xW700
01139428X	01148932X	glassdoor	complete	H1200xW800
01139429X	01148933X	glassdoor	complete	H1200xW900
01139430X	01148934X	glassdoor	complete	H1400xW600
01139431X	01148935X	glassdoor	complete	H1400xW700
01139432X	01148936X	glassdoor	complete	H1400xW800
01139433X	01148937X	glassdoor	complete	H1400xW900
01139434X	01148938X	glassdoor	complete	H1600xW600
01139435X	01148939X	glassdoor	complete	H1600xW700
01139436X	01148940X	glassdoor	complete	H1600xW800
01139437X	01148941X	glassdoor	complete	H1600xW900
01139438X	01148942X	glassdoor	complete	H1800xW600
01139439X	01148943X	glassdoor	complete	H1800xW700
01139440X	01148944X	glassdoor	complete	H1800xW800
01139441X	01148945X	glassdoor	complete	H1800xW900
01139442X	01148946X	glassdoor	complete	H2000xW600
01139443X	01148947X	glassdoor	complete	H2000xW700
01139444X	01148948X	glassdoor	complete	H2000xW800
01139445X	01148949X	glassdoor	complete	H2000xW900
01139446X	01148950X	glassdoor	complete	H2200xW600
01139447X	01148951X	glassdoor	complete	H2200xW700
01139448X	01148952X	glassdoor	complete	H2200xW800
01139449X	01148953X	glassdoor	complete	H2200xW900