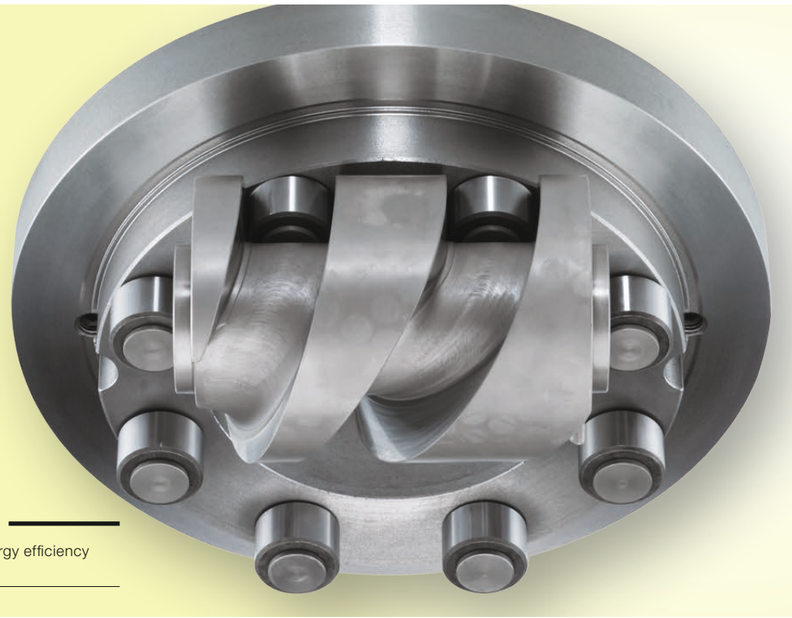
WE LOVE TECHNOLOGY FIBRO

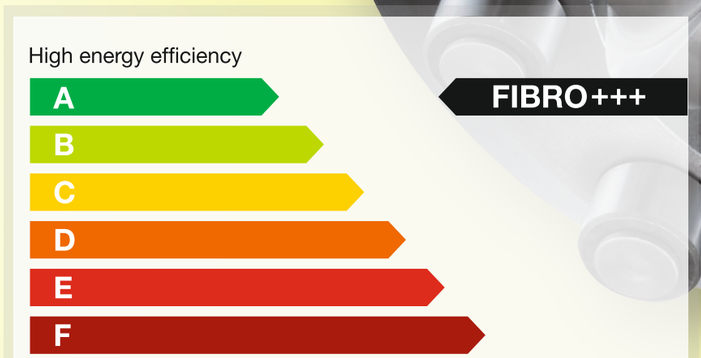
ELECTROMECHANICAL UNIVERSAL ROTARY TABLES **FIBROTOR®**

ROTO***MOTION*** **ROTARY TABLES FOR AUTOMATION SYSTEMS**



CONTROL CAM

with increased energy efficiency



FIBROTOR®

NO ONE WILL DELIVER FASTER …

THEY HAVE IT ALL

An extremely long life time and shortest cycle time with an excellent precision and no need for maintenance – these are important aspects to any production line. FIBROTOR® rotary tables combine all of them and offer as an additional highlight up to five years warranty.

HIGHEST ENERGY EFFICIENCY

Thanks to its energy effivient control cam, energy consumption drops by 20 %. Alternatively, higher mass can be moved, shorter indexing time can be realized or a smaller rotary table can be used. This effect is possible due to an optimisation of the control cam according to the energy efficiency formula. In the process, the service life of the rotary tables amounts to 20,000 hours MTTF (Mean Time To Failure).

Indeed, FIBROTOR® rotary tables may be used as assembly tables; welding, positioning or storing tables; in packaging, printing, labelling or laser machines, as well as for chipping. FIBROTOR® rotary tables work without the elastic drive elements that tend to get worn down and enable highly precise positioning and repeatability. Extremely short positioning times ensure excellent productivity.

A large degree of standardisation and a consistent modular design allow us to deliver FIBROTOR® rotary tables with very short turnarounds. For an optimal simulation of your system, please download all CAD data from www.fibro.de.

… OR PROVIDE GREATER RELIABILITY.

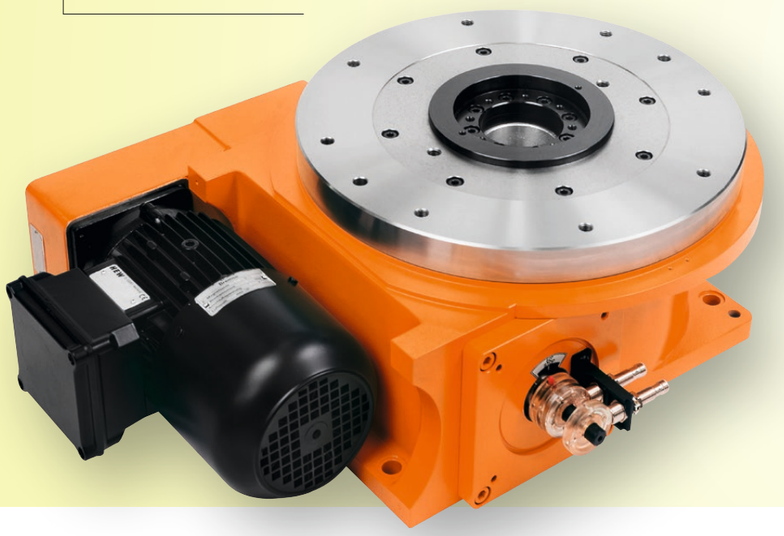
TECHNICAL HIGHLIGHTS FIBROTOR®

OUR TECHNICAL HIGHLIGHTS – YOUR COMPETITIVE EDGE!

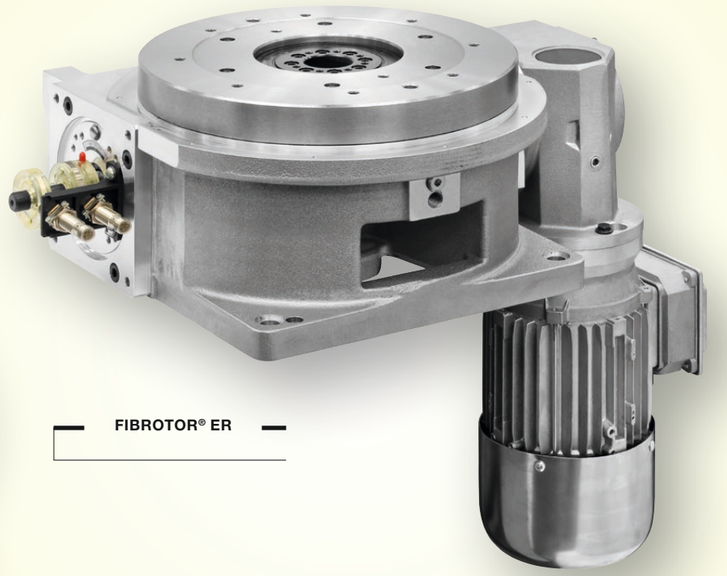
- Highest transport loads with the shortest indexing times thanks to energy-efficient design and large dimensioned axial needle bearing
- Enormous rigidity and optimum crash behaviour thanks to cam rollers with friction bearings
- Hardened and ground control cam provides best transfer of power and optimum motion sequence
- Low subsequent costs thanks to lifetime lubrication for minimum maintenance
- Available with numerous additional options for different assembly and application possibilities

FIBROTOR® – UNIVERSAL POSITIONING FOR:

- General drive tasks, e.g. driving chain belts, as a control gear or as a storing table
- Transporting and supplying tasks, e.g. for assembly, packaging, printing, labelling and riveting applications
- Chipping, e.g. deburring, honing, drilling and light milling
- Non-machining processing, e.g. lasing, welding and bending



FIBROTOR® EM



FIBROTOR® ER

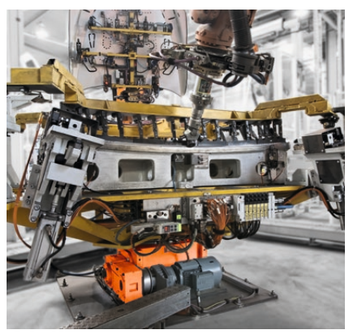
FIBROTOR® RT

FIBROTOR®

THREE STANDARD MODELS TO SUIT ANY JOB!

A VAST RANGE OF PRODUCTS

FIBRO can offer you the suitable rotary table type for the application at hand, with the FIBROTOR® product range. FIBRO provides highly accurate solutions, specifically made to satisfy each customer's demands, from the FIBROTOR® EM line, or an attractively priced universal rotary table from the FIBROTOR® ER line, which serves as a great basic model and which can be supplied in short term thanks to a maximum degree of standardisation. The rotary indexing ring FIBROTOR® RT is perfect for any app-lication which requires a centre hole. All FIBROTOR® rotary tables can be used horizontally and vertically.



FIBROTOR® EM AND EM.NC PROPERTIES

- Premium model of the FIBROTOR® universal rotary table with fixed division or for flexible positioning
- Custom manufacturing according to your individual application requirements
- Higher accuracies and shorter indexing times

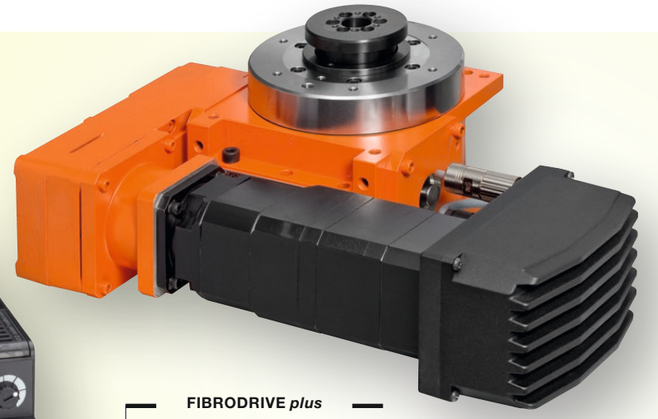
FIBROTOR® ER PROPERTIES

- Cost-optimised, standardised FIBROTOR® model
- Shorter delivery times compared to FIBROTOR EM

FIBROTOR® RT AND RT.NC PROPERTIES

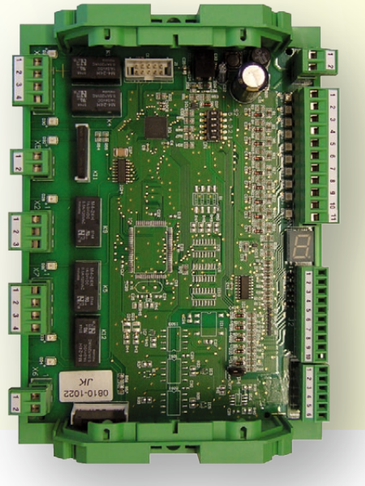
- The rotary table with a large centre hole
- FIBROTOR® RT can also be supplied as RT.NC model for flexible positioning

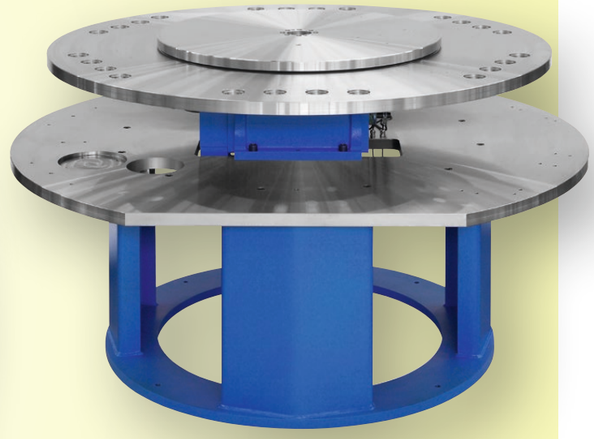
FREQUENCY INVERTER
with FIBRO-Software



FIBRODRIVE *plus*

FIBROTOR®
microprocessor control card





ADDITIONAL TABLE TOP
and machine stand

FIBROTOR®

ADDITIONAL OPTIONS FOR ALL FIBROTOR®

FREQUENCY INVERTER WITH FIBRO-SOFTWARE

- 5-year warranty!
- Pre-programmed sequences such as CW, CCW rotation or pendulum mode, soft start, specifically after emergency stop, rapid speed and creeping speed
- Optimisation of the indexing times
- Less wiring complexity
- Minimum brake wear
- Monitoring of the three-phase brake motor

FIBRODRIVE *plus*

- AC servomotor with integrated controller
- Autonomous operation – intelligent stand-alone solution including diagnosis function via LED
- Most simple pluggable cable connections for logic and power supply
- No customer implementing required
- USB connection to the terminal block
- Teach-in function
- Simple handling, thanks to the intuitive program software FIBRO Servo-Link
- Matched system with decentralised connection that requires no amplifier in the control cabinet
- Safe Torque Off STO according to EN ISO 13849-1 Performance Level e

FIBROTOR® MICROPROCESSOR CONTROL CARD

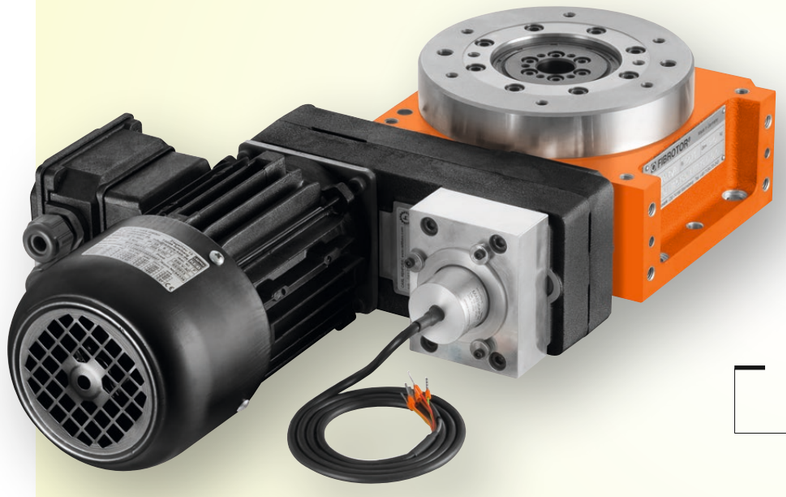
- Microprocessor-controlled and monitored functional sequence
- Autonomous functional sequence
- No time delay due to external cycles
- Fault monitoring
- Housing for mounting rail

ADDITIONAL TABLE TOP AND MACHINE STAND

- Rotating additional table top, fix plates for top and bottom manufactured specifically to customer requirements
- Standard machine stands and individual solutions

INSTALLATION AID

In addition, we also supply centring rings as well as centring flanges for faster set up and more precise installation of your superstructures!

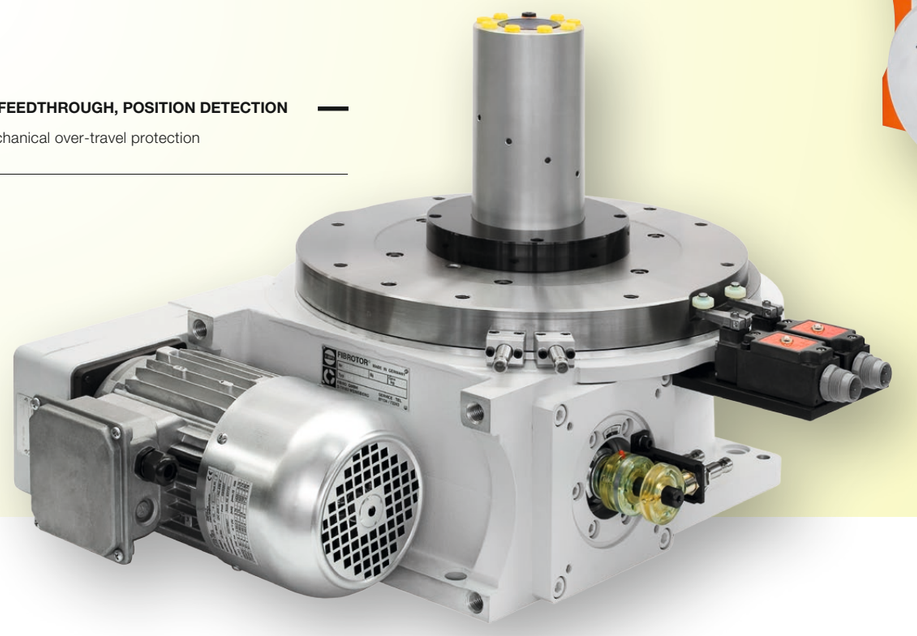


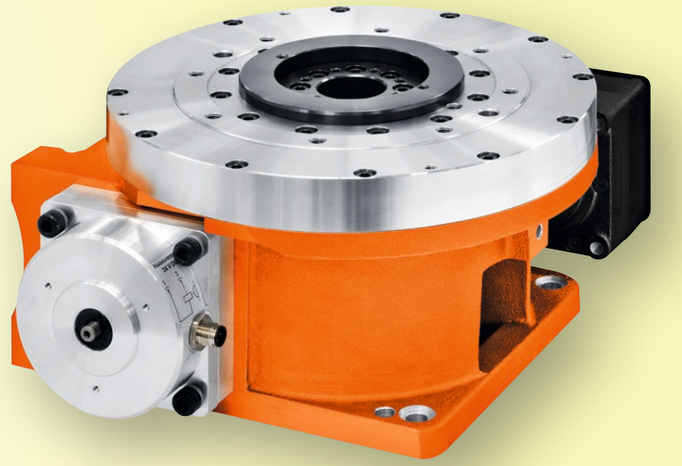
SMART POSITION DETECTION

with electrical over-travel protection

MEDIA FEEDTHROUGH, POSITION DETECTION

and mechanical over-travel protection





REINFORCED TABLE TOP BEARING

and hydraulic table top clamping

FIBROTOR®

ADDITIONAL OPTIONS FOR FIBROTOR® EM AND EM.NC

SMART POSITION DETECTION

- Smart module for detection of the position of the table top
- Applicable as electrical over-travel protection
- Available for FIBROTOR EM and ER
- Protection class IP65 provides excellent protection against humidity and spray water
- Increases the process safety of your system

MEDIA FEEDTHROUGH, POSITION DETECTION AND OVER-TRAVEL PROTECTION

- Media feedthrough for liquid or gaseous media and electrical signals
- Position detection at table top
- Over-travel protection to avoid cable breaks during pendulum mode

REINFORCED TABLE TOP BEARING

- For one-sided loading or for cylindrical machining for absorbing the highest tilting moments
- Higher tilting moments on the positioned table top (+200 %)
- Higher tilting moments on the rotating table top (+300 %)

HYDRAULIC TABLE TOP CLAMPING

- When processing workpieces for the highest tangential loads
- Release of the drive elements
- Higher tangential moments (+250 %)

FIBROTOR® – THE MOST IMPORTANT DATA

SIZES		EM.10 EM.NC.10 ER.10	EM.11 EM.NC.11 ER.11	EM.12 EM.NC.12 ER.12	EM.13 EM.NC.13 ER.13	EM.14*** EM.NC.14*** ER.14***	EM.15 EM.NC.15 ER.15
MAIN DIMENSIONS							
Table top Ø	mm	100	160	220	280	350	410
Overall height	mm	100	100/125*	150	175	200	220
Centre hole Ø	mm	10	22*	35	35/70**	70	70
Weight approx.	kg	12	20	35	70	120	150
LOAD DATA							
Perm. add-on Ø	mm	520	800	1,000	1,400	1,800	2,000
Transport load	kg	100	500	800	1,500	2,000	2,500
Perm. axial load	N	4,000	8,000	12,000	16,000	20,000	25,000
Perm. radial load	N	1,000	3,500	8,000	10,000	12,500	15,000
Perm. tilting moment in position	Nm	350	750	2,000	3,000	4,500	6,000
Perm. tilting moment rotating	Nm	100	200	600	1,000	1,500	2,000
Perm. tangential moment standard EM + ER	Nm	25	300	400	600	900	1,200
Perm. tangential moment EM.NC	Nm	25	125	200	250	300	320
DIVISIONS							
Standard divisions EM + ER		2 / 3 / 5 / 6 / 8 / 10 / 12 / 16 / 20 / 24					
EM divisions up to		48	96	96	96	96	96
EM.NC. divisions		any position					
ACCURACIES EM + EM.NC							
EM indexing accuracy division 2 – 12		± 40	± 25	± 18	± 18	± 15	± 12
EM indexing accuracy division 16 – 24		± 50	± 40	± 25	± 25	± 22	± 20
EM indexing accuracy above division 24		± 100	± 80	± 40	± 35	± 35	± 35
EM.NC indexing accuracy direct measurement		–	± 20	± 10	± 10	± 10	± 10
EM.NC indexing accuracy indirect measurement		± 120	± 60	± 45	± 45	± 45	± 45
EM.NC indexing accuracy measurement on the motor		± 300	± 210	± 150	± 120	± 100	± 80
Axial runout	mm	0.02	0.01	0.01	0.01	0.015	0.015
Concentricity	mm	0.02	0.01	0.01	0.01	0.015	0.015
Plane parallelism	mm	0.04	0.02	0.03	0.03	0.03	0.04
ACCURACIES ER							
ER indexing accuracy division 2 – 12		± 60	± 40	± 35	± 30	± 25	± 20
ER indexing accuracy division 16 – 24		± 70	± 50	± 40	± 35	± 30	± 25
Axial runout	mm	0.02	0.015	0.02	0.02	0.025	0.03
Concentricity	mm	0.02	0.015	0.02	0.02	0.025	0.03
Plane parallelism	mm	0.04	0.03	0.04	0.04	0.05	0.06
ADDITIONAL OPTIONS EM + EM.NC							
Perm. tilting moment w. strengthened bearing in position	Nm	–	2,250	6,000	9,000	13,500	18,000
Perm. tilting moment w. strengthened bearing rotating	Nm	200	600	1,800	3,000	4,500	6,000
Perm. tangential moment with table top clamping	Nm	–	450	800	900	1,200	1,800

* for division 02, overall height 125 mm, eccentric centre hole ** division 02-05 ø 35 mm, from division 06 and EM.NC ø 70 mm *** available 2018

SIZES		EM.16 EM.NC.16 ER.16	EM.17 EM.NC.17 ER.17	EM.18 EM.NC.18	RT.12 RT.NC.12	RT.13 RT.NC.13	RT.0750 RT.NC.0750
MAIN DIMENSIONS							
Table top Ø	mm	460	558	750	360	460	654
Overall height	mm	270	380	420	65	65	95
Centre hole Ø	mm	110	130	180	170	270	440
Weight approx.	kg	220	450	850	50	80	230
LOAD DATA							
Perm. add-on Ø	mm	2,400	2,800	3,500	2,000	2,200	3,000
Transport load	kg	4,000	5,500	6,400	400	500	800
Perm. axial load	N	32,000	70,000	100,000	12,000	15,000	5,000
Perm. radial load	N	20,000	25,000	36,000	8,000	10,000	8,000
Perm. tilting moment in position	Nm	9,000	12,000	18,000	2,000	2,200	2,250
Perm. tilting moment rotating	Nm	3,000	4,000	6,000	600	660	750
Perm. tangential moment standard EM + ER + RT	Nm	1,400	1,600	2,500	400	500	2,400
Perm. tangential moment EM.NC + RT.NC	Nm	500	700	800	200	250	2,000
DIVISIONS							
Standard divisions EM + ER + RT		2 / 3 / 5 / 6 / 8 / 10 / 12 / 16 / 20 / 24****					
EM divisions + RT divisions up to		96	130	130	36	36	30
EM.NC. + RT.NC divisions		any position					
ACCURACIES EM + EM.NC + RT. + RT.NC							
EM indexing accuracy division 2 – 12		± 12	± 10	± 10	± 12 (T 4 – 20)	± 12 (T 6 – 20)	–
EM indexing accuracy division 16 – 24		± 18	± 15	± 15	± 18 (T 22 – 36)	± 18 (T 22 – 36)	± 12 (T 4 – 30)
EM indexing accuracy above division 24		± 30	± 25	± 25	± 30 (above T36)	± 30 (above T36)	± 18 (above T30)
EM.NC indexing accuracy direct measurement		± 10	± 10	± 10	–	–	–
EM.NC indexing accuracy indirect measurement		± 30	± 30	± 30	± 30	± 30	± 30
EM.NC indexing accuracy measurement on the motor		± 60	± 50	± 40	± 120	± 120	± 40
Axial runout	mm	0.015	0.02	0.02	0.03	0.04	0.05
Concentricity	mm	0.015	0.02	0.02	0.03	0.04	0.04
Plane parallslism	mm	0.04	0.04	0.04	0.06	0.08	0.05
ACCURACIES ER							
ER indexing accuracy division 2 – 12		± 20	± 20	–	–	–	–
ER indexing accuracy division 16 – 24		± 25	± 25	–	–	–	–
Axial runout	mm	0.03	0.04	–	–	–	–
Concentricity	mm	0.03	0.04	–	–	–	–
Plane parallelism	mm	0.06	0.08	–	–	–	–
ADDITIONAL OPTIONS EM + EM.NC							
Perm. tilting moment w. strengthened bearing in position	Nm	27,000	36,000	54,000	–	–	–
Perm. tilting moment w. strengthened bearing rotating	Nm	9,000	12,000	18,000	–	–	–
Perm. tangential moment with table top clamping	Nm	1,900	2,500	4,000	–	–	–

**** RT.12 small division 04 not available, RT.13 small division 06 not available

Subject to technical changes

WE LOVE TECHNOLOGY FIBRO

FIBRO GMBH

Business Area
Rotary Tables
Weidachstraße 41-43
74189 Weinsberg
T +49 7134 73-0
F +49 7134 73-218
info@fibro.de
www.fibro.com

A COMPANY OF THE LÄPPLE GROUP

- **LÄPPLE AUTOMOTIVE**
- **FIBRO**
- **FIBRO LÄPPLE TECHNOLOGY**
- **LÄPPLE AUS- UND WEITERBILDUNG**

BRANCHES

FIBRO France SARL
Département Plateaux Diviseurs
26 Avenue de l'Europe
FR-67300 Schiltigheim
T +33 390 204040
F +33 388 810829
info@fibro.fr

FIBRO Inc.
Business Area Rotary Tables
139 Harrison Avenue
US-Rockford, IL 61104
T +1 815 2291300
F +1 815 2291303
info@fibroinc.com

FIBRO ASIA PTE. Ltd.
9 Changi South Street 3, #07-04
Singapore 486361
T +65 65 439963
F +65 65 439962
info@fibro-asia.com

FIBRO INDIA PRECISION PRODUCTS PVT. LTD.
Regd. Office & Works
Plot: A-55, Phase II,
Chakan MIDC, Taluka Khed
410501 Pune
T +91 2135 33 88 00
F +91 2135 33 88 88
info@fibro-india.com

FIBRO (SHANGHAI) Precision Products Co., LTD.
1st Floor, Building 3, No. 253,
Ai Du Road, Pilot Free Trade Zone
Shanghai 200131
T +86 021 6083 1589
F +86 021 6083 1599
info@fibro.cn

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