FIBROTAKT®
Rotary Indexing Table with Face Gear
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14th Edition · This edition makes all previous catalogues invalid. We reserve the right to make further modifications relevant to technical developments.
FIBRO – your production partner

**FIBRO – an internationally successful company.**
As a market leader in Standard Parts, Rotary Indexing Tables and Automation, FIBRO provides products and solutions to ensure your production keeps moving.
So what is the secret of the FIBRO success? Products developed in-house, tailor-made for the market with uncompromising quality.

**Indexing Tables**
From 1962 onwards FIBRO pioneered the design and manufacture of indexing tables and soon gained an enviable reputation.
FIBROTAKT® indexing tables with face gear and ultra-high precision indexing, together with dependable rigidity. Drive options: pneumatic, hydraulic via rack and pinion or electric with worm drive.
FIBROPLAN® NC – rotary tables with backlash adjustment worm drive or torque motor for use in machine tools for universal positioning and round and multi-axis processes (simultaneous operation).
FIBROTOR® revolving tables and indexing tables with positive drive cam, offering very short cycle times even when transporting heavy loads. Mainly used in non-machining applications. Thousands of FIBRO units are in use worldwide as integral key components in high-output machinery.

**Standard Parts**
Today the Standard Parts Division operates from the Hassmersheim and Weinsberg works, which manufacture a comprehensive range of standard parts and maintain stocks ready for immediate despatch world-wide. The machine tool, mechanical engineering and systems engineering product ranges have been developed to meet the needs of customers.
They include steel die sets, guide elements, oilless guide elements and ground precision components such as punches and matrixes, special steel compression springs, gas springs, forming materials, metal bonding agents, moulding resins, peripheral equipment for pressing and tool making, tool slides with cam or roller slides and hydraulic cam systems.
FIBRO has become renowned world-wide for its comprehensive range of products in stock and its readiness to deliver.

But good products are not enough on their own. FIBRO combines excellent products, the know-how and service competence of an internationally focused company, matched to the actual needs of customers - wherever they are.
FIBRO has been active in the field of automation and robotics since 1974 and offers one of the most comprehensive ranges in this field. A cleverly designed modular system based on translation units, rotary units, grippers, and guide gantries with trolleys make for easy construction of individual machines and complete systems, ranging from simple pick & place units right up to multi-axis robots. These series-manufactured modules with electric, pneumatic or hydraulic drive, guarantee both high functional reliability and cost-effective prices. The modular gantry systems can solve virtually any transporting problem using linear gantries, surface gantries and extension gantries. These systems are being used successfully in many industries world-wide. Applications include linking machine tools (automotive production), tool changing in machining facilities, palletising work pieces, unloading injection moulding dies, PCB feeders, press linking, palletising, stacking, loading and unloading, transporting and flexible linking, storage and buffering of work pieces of different sizes.

Since its establishment in 1974 GSA Automation GmbH has developed to become a world market leader in the manufacture of handling equipment and transport systems. Over this period GSA has installed over 200 fully automated systems for all the leading automotive and machine tool manufacturers. GSA has been a member of the FIBRO group since 2004. Our production range consists of linear and surface gantry systems, transport systems such as precision roller guides, accumulating chain conveyors, pallet accumulating conveyors and flexible decoupling modules, shelf stacking systems and pallet mechanical handling systems.

We can provide our customers with dependable state of the art high performance systems from our standard range. We take complete responsibility for the complete project, starting with designing the solution concepts at the design phase, right through to the final handover of the ready-to-go system.

Facts and figures on FIBRO:
- founded 1958
- approximately 1,100 staff
- 80 representatives and service stations world-wide
- branches in France, USA, Switzerland and Singapore
- ISO 9001:2000 Quality Assurance and VDA 6.4 certification
- a company in the LÄPPLE Group
FIBROTAKT® at a glance

The FIBROTAKT® indexing table is produced for use as an indexing axis in machine tools, such as:
• machining centres,
• rotary indexing machines,
• production and manufacturing systems of various types.

The FIBROTAKT® is used to mount fixtures and work pieces or as tool holders.

A characteristic of the FIBROTAKT® is the principal function of positive locking into a face gear, that affords high indexing accuracy and extreme rigidity.

A wide range of types and versions for horizontal and vertical use is available.

Drive versions:
- pneumatic
- hydraulic
- electric

Pneumatic indexing table
FIBROTAKT type: 11.11.4
- table top 900 × 550 mm,
- division 2 (pendulum operation)
- working pressure 6 bar
- max. mass moment of inertia J = 17 kgm²
- max. transported load 2 × 100 kg
- concentricity 0.01 mm
- run-out 0.01 mm
- indexing accuracy ± 10°

- indexing accuracy up to ±1°, corresponding to ±1µ on the circumference at Ø 400 dia.;
- repeatability 10% of the indexing accuracy;
- high rigidity against applied machining forces;
- optimised indexing time due to adjustable hydraulic damping;
- wide range of types and sizes;
- robust and wear-resistant design;
- high reliability and long life;
- special designs for specific applications.
## Technical Description

### 1. Types

<table>
<thead>
<tr>
<th>Available:</th>
<th>From standard range</th>
<th>To customer specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard</strong></td>
<td></td>
<td>Special purpose applications</td>
</tr>
<tr>
<td>for mainly horizontal applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vertical</strong></td>
<td></td>
<td>Special purpose applications</td>
</tr>
<tr>
<td>for mainly vertical applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Planetary indexing table</strong></td>
<td></td>
<td>Individual units from standard range</td>
</tr>
<tr>
<td><strong>Pallet mounting indexing table for pallets to DIN 55201</strong></td>
<td></td>
<td>Combination to customers specification</td>
</tr>
<tr>
<td><strong>Slide housing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Multi-axis versions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Indexing tables with machine slide</strong></td>
<td>Individual units from standard range</td>
<td>Combination to customers specification</td>
</tr>
</tbody>
</table>

Right of alterations reserved
**Technical Description**

2. **Drive versions**

   - pneumatic
   - hydraulic
   - electric

2.1 **Pneumatic indexing table**
   (features, characteristics)
   - Pneumatic rack and pinion drive with pneumatic clamping into face gears, ideally suitable for:
   - light to medium transported loads.
   - fast indexing plus high frequency indexing
   - maximum applied force and torque accepted due to the use of large diameter face gears and clamping cylinder.
   - adjustable speed control and hydraulic damping to suit variable operating conditions.
   - up to 11 index selections can be chosen from $1/2^\circ$ to $180^\circ$.
   - clockwise, anti-clockwise or multi pendulum direction of rotation available
   - external or internal control available.

2.2 **Hydraulic indexing table**
   (features, characteristics)
   - hydraulic rack and pinion drive with hydraulic clamping into face gears, ideally suitable for:
   - high transported loads.
   - fast indexing plus high frequency indexing.
   - maximum applied force and torque accepted by hydraulic clamping.
   - adjustable speed control and hydraulic damping to suit variable operating conditions.
   - up to 11 index selections can be chosen from $1/2^\circ$ to $180^\circ$.
   - clockwise, anti-clockwise or multi pendulum direction of rotation available
   - external control.

2.3 **Electric drive indexing table**
   (features, characteristics)
   - with servomotor and gearbox.
   - hydraulic clamping into face gears.
   - random indexing available bi-directional (from $1/4^\circ$ to $360^\circ$).
   - Control via the machine control (e.g. 4th axis or separately programmable CNC control).
   - separate CNC control is obtainable from the FIBRO programme.
   - high transported loads and torques accepted as with hydraulic indexing tables

3. **Clamping into face gears**

3.1 In the indexing cycle the table top is rotated to the position (pre-position) and then clamped with extreme accuracy into the face gears (final position). The table top is now rigidly clamped without any movement to the housing: indexing accuracies up to ± 1.0 µ can be achieved.
   The results of rigid clamping into face gears such as high accuracy, the acceptance of the highest forces and torques are the acknowledged features of the FIBROTAKT.
Two versions for clamping into face gears:

**with lifting table top,**

fitted to all FIBROTAKT sizes 0 to 8, with the advantage of a simple and solid design and extreme indexing accuracy.

Locked

Unlocked (stroke approx. 3 – 4 mm)

**with non-lifting table top,**

fitted to FIBROTAKT indexing tables from size 7 where large masses are to be transported and where for special reasons of the process lifting is not required.

Locked

Unlocked, stroke < 0.1 mm

---

4. Indexing cycle

4.1 Pneumatic and hydraulic indexing table with rack-and-pinion drive

The indexing cycle is in 4 stages:

1. Unclamping of the face gears, simultaneously engagement of the drive clutch gear coupling.
2. Rotation of the table top to the index position (pre-position) via the rack and pinion with regulated speed and damping control.
3. Clamping into the face gears, precise centring and positioning (positive locking), simultaneously disengagement of the drive clutch gear coupling.
4. Return of the rack to the start position.

Rack drive size 0 – 8, lifting version

4.2 Indexing table with servo drive

1. Unclamping of the face gears.
2. Rotation of the table top via servo motor and gearbox to the index position (pre-position).
3. Clamping into the face gears for precise centring and positioning (positive locking).

Worm drive, size 3 – 8, lifting version

Pinion – gear ring drive from size 7, non-lifting version
5. Indexing

The index of angular step depends upon the number of teeth in the face gear. The smallest increment is one tooth. Any index may be selected that is a multiple of the smallest increment = 1 tooth.

<table>
<thead>
<tr>
<th>Number of teeth</th>
<th>Possible divisions within 360°</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>2–3–4–6–8–12–16–24–48</td>
</tr>
<tr>
<td>56</td>
<td>2–4–7–8–14–28–56</td>
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<tr>
<td>63</td>
<td>3–7–9–21–63</td>
</tr>
<tr>
<td>70</td>
<td>2–5–7–10–14–35–70</td>
</tr>
<tr>
<td>72</td>
<td>2–3–4–6–8–9–12–18–24–36–72</td>
</tr>
<tr>
<td>78</td>
<td>2–3–6–13–26–29–78</td>
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<tr>
<td>100</td>
<td>2–4–5–10–20–25–50–100</td>
</tr>
<tr>
<td>110</td>
<td>2–5–10–11–22–55–110</td>
</tr>
</tbody>
</table>

Alternative number of teeth on request

Modular ranges

Right of alterations reserved
6. Change of index

6.1 Rack + pinion drive

**Fixed index = F (stop)**

The required index is determined by a stop, the length of which limits the stroke of the rack. Changing the stop it is possible to change to another index on the pneumatic internal control indexing table. This version mainly used where only one index is required.

6.1 Rack + pinion drive

**Adjustable index = U (rotary selector knob)**

11 alternative indexes may be selected with this version within the limits of the number of teeth of the face gear. The selection is achieved by rotating the selector knob which alters the rack stroke in each case.

6.3 Electric drive

**Programmable index change**

The electric motor worm drive table with CNC control allows any index within the limits of the number of teeth of the face gear to be selected and reached in either direction or rotation.
7. Control

7.1 Pneumatic internal control indexing table

The control valves are mounted within the housing. The indexing cycle is initiated by actuating the push button on the housing or by a start pulse from a remote control (start pressure impulse).

The cycle is then automatic through mechanically actuated valves.

7.2 Pneumatic external control indexing table

The indexing cycle is achieved by an external electrical control and external control valves. Limit switches are provided within a switch box to signal table clamped, unclamped, rack forward and rack return. The switch box is easily accessible with a plug/socket for limit switch cable outputs.

7.3 Hydraulic external control indexing table

As for 7.2.

7.4 Electric motor worm drive indexing table with external control

With CNC control random indexing is possible within the number of teeth of the face gear.

Indexing control is by an encoder on the motor. The unclamped and clamped condition is signalled by limit switches.

Option

The electrical worm drive indexing table can be equipped with an absolute reference point being generated by a proximity switch (DIN 50008) and by the reference signal of the encoder.

When the reference point is approached, the proximity switch reduces the speed to creep speed and stops rotation when the encoder reference signal is reached (see data sheets for details). The reference point must be approached in clockwise rotation.

Clockwise rotation

8. Hydraulic damping, speed of rotation

The deceleration of the rotation masses at the end of indexing is by a hydraulic damper on the pneumatic and the hydraulic indexing tables.

The damper is adjustable to suit various operating conditions and applications.

The high efficiency damper assembly is reflected in the fast indexing times and high transported loads - see technical data. The rotational speed is regulated by a built-in throttle valve.

9. Accessories

- Switch control
- Mechanical index control
- Position detection
- Monitoring of damping pressure
- Rotary manifolds
  (pneumatic, hydraulic, electric)
9. Accuracy

Due to the high precision in the production of important components such as face gears, table top and the housing, plus the utmost care taken in assembly, extreme accuracy (indexing and run out accuracy and parallelism) in the completed indexing table is achieved. A test certificate of all measured accuracies is provided with each table.

To suit the actual requirements of the specific application, the FIBROTAKT range offers four accuracy classes with the listed tolerances for the indexing accuracy.

See data sheets for details.
**Programme Overview FIBROTAKT® Type Standard**

1. **Type**
   - Defined by order number digits

2. **Major Dimensions**
   - **Table Top Diameter**
     - mm: 100, 160, 200, 320, 400
   - Height to table face
     - mm: 90, 120, 145, 160, 205
   - Centre height
     - mm: – – – – –
   - Number of teeth
     - Standard (rack + pinion drive): 72, 72, 72, 96, 96
     - Max.: 96, 96, 120, 144, 180
     - Standard (worm drive): – – – – –
     - Max.: – – – – –

3. **Drive Details**
   - **Working Pressure**
     - Pneumatic: bar
     - Hydraulic: bar

4. **Load Data**
   - **Machining Forces (acting on clamped table top):**
     - Table top diameter
       - \( \emptyset \): 100, 160, 200, 320, 400
     - Machining forces
       - N: 5000, 12500, 15000, 20000, 30000
     - Tangential moment
       - Nm: 130, 380, 605, 2300, 5000
     - Tilting moment
       - Nm: 72, 205, 325, 1280, 2700
   - **Table Loads on Horizontal Table Top:**
     - Load – within table top diameter
       - kg: 20, 40, 70, 350, 500
     - Mass moment of inertia
       - kgm²: 0.025, 0.13, 0.5, 4.5, 10
     - Torque of eccentric load
       - Nm: 30, 70, 115, 400, 700
   - **Table Loads on Vertical Table Top:**
     - Load – within table top diameter
       - kg: 8, 16, 28, 140, 200
     - Mass moment of inertia
       - kgm²: 0.025, 0.13, 0.5, 4.5, 10
     - Torque of table load
       - Nm: 17, 39, 63, 225, 540
     - Torque of eccentric load
       - Nm: – – – – 79
   - Table load with tailstock
     - kg: 20, 40, 70, 350, 500

5. **Accuracy**
   - **Class**
     - \( \emptyset \): 4, 3, 2, 1
   - Indexing accuracy in seconds
     - ±12, ±6, ±3, ±1.5
   - Repeatability as a percentage of indexing accuracy
     - %: 30, 25, 20, 20

6. **Indexing Time**
   - **Rack + Pinion Drive/Worm Drive**
     - At mass moment of inertia from load
       - kgm²: 0.025, 0.13, 0.5, 4.5, 10
       - for \( T 6 = 60° \)
         - s: 0.38, 0.7, 0.9, 1.4, 2.0
       - for \( T 4 = 90° \)
         - s: 0.75, 1.0, 1.2, 1.7, 2.3

Right of alterations reserved
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<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
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<th>Column 8</th>
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<td>10.16.7</td>
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<td>62, 63</td>
<td>64, 65</td>
<td>66, 67</td>
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</tr>
</tbody>
</table>

### Standard

with non-lifting table top

Right of alterations reserved
11.11.0. Technical data

1. Type designation
   - Type: Standard, Pneumatic Indexing Table, with internal control
   - Indexing with lifting table top
   - FIBROTAKT

2. Table top dimensions
   - Table top execution: round without Tee-slots, round with Tee-slots, to customer's drawing
   - Table top dimension: 100 mm

3. Table clamping
   - Pneumatic

4. Rack + pinion drive
   - Max. index angle: up to 180° (from 12), up to 120° (from 13)
   - Rotation direction: standard: clockwise, anti-clockwise, pendulum or multiple rotation
   - Indexing accuracy: ±0.003, ±0.0015, ±0.0008, ±0.0004
   - Runout of table top: mm TIR 0.004, 0.002, 0.001, 0.0005

5. Change of index (see page 9)
   - Fixed division "F"; variable division "U"; max. 11 divisions

6. Accuracy
   - Indexing accuracy: seconds ±0.001, ±0.0003, ±0.00015, ±0.00008, ±0.00004
   - Repeatability as percentage: 30, 25, 20, 20

7. Face gear, number of teeth/divisions
   - Standard number of teeth: 72 max. 96
   - Divisions obtainable: T 2, 3, 4, 6, 8, 9, 12, 18; 24, 36, 72
   - Required division "T..." to be completed when ordering

8. Operating data
   - Pressure medium: Air
   - Working pressure: bar 6 (min. 5, max. 8)
   - Air consumption per cycle: l 0.59 (T 4)
   - Table lift: mm approx. 3
   - Shipping weight: kg approx. 8

9. Indexing time
   - (at working pressure 6 bar)
   - Mass moment of inertia: kgm² 0.025
   - Indexing time: unclamp, rotate, clamp s 0.95, 0.75, 0.50, 0.38, 0.35
   - Indexing frequency: per min⁻¹ 41, 50, 65, 82, 90
   - Mass moment of inertia: kgm² 0.017
   - Indexing time: unclamp, rotate, clamp s 0.92, 0.72, 0.47, 0.35, 0.32
   - Indexing frequency: per min⁻¹ 42, 51, 66, 84, 92

Example of ordering code number

Right of alterations reserved
10. Loading data (at working pressure 6 bar)

<table>
<thead>
<tr>
<th>Machining forces – against clamped table top:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>machining thrust perpendicular to table top within 100 mm</td>
<td>N 5000</td>
</tr>
<tr>
<td>tangential moment</td>
<td>Nm 132</td>
</tr>
<tr>
<td>tilting moment</td>
<td>Nm 72</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table loads – carried on horizontal table top:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>load, carried within 100 mm dia.</td>
<td>kg 20</td>
</tr>
<tr>
<td>mass moment of inertia of table load</td>
<td>kgm² 0,025</td>
</tr>
<tr>
<td>moment of eccentric load</td>
<td>Nm 30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table loads – carried on vertical table top:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>load, carried within 100 mm dia.</td>
<td>kg 8</td>
</tr>
<tr>
<td>mass moment of inertia of table load</td>
<td>kgm² 0,025</td>
</tr>
<tr>
<td>torque of table load</td>
<td>Nm 17</td>
</tr>
<tr>
<td>moment of eccentric load</td>
<td>Nm 20</td>
</tr>
<tr>
<td>table load with tailstock</td>
<td>kg 20</td>
</tr>
</tbody>
</table>

11. Dimensions

- H 8 with accuracy class 4
- H 7 with accuracy class 3
- H 6 with accuracy class 2 and 1

Right of alterations reserved
### 11.11.1. Technical data

#### 1. Type designation

<table>
<thead>
<tr>
<th>Block 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIBROTAKT</td>
</tr>
<tr>
<td><strong>“indexing with lifting table top”</strong></td>
</tr>
</tbody>
</table>

**Type**
- Standard, Pneumatic Indexing Table, with internal control

<table>
<thead>
<tr>
<th>Block 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

**Size**
- 1

**working position**
- any

#### 2. Table top dimensions

<table>
<thead>
<tr>
<th>Block 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

**Table top execution**
- Table top dimension
  - 160 mm

**Round**
- without Tee-slots: 11
  - 13 Radial

**To customer's drawing**: 16

#### 3. Table clamping

<table>
<thead>
<tr>
<th>Block 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

**pneumatic**

#### 4. Rack + pinion drive

<table>
<thead>
<tr>
<th>Block 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

**max. index angle**
- up to 180° (from 12)
- up to 120° (from 13)

**Rotation direction**
- available for:
  - standard: clockwise: 1
  - anti-clockwise: 0
  - pendulum or multiple:
    - pendulum rotation: 0

**Fixed division “F”**

**Variable division “U”**

**max. 11 divisions**

#### 5. Change of index (see page 9)

<table>
<thead>
<tr>
<th>Block 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

**Fixed division “F”**

**Variable division “U”**

**Max. 11 divisions**

#### 6. Accuracy (at pressure/diameter: 6 bar/160 mm)

<table>
<thead>
<tr>
<th>Block 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

##### Class

<table>
<thead>
<tr>
<th>Block 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

**Indexing accuracy**
- seconds
  - ±0.005
- radians at dia. ∅160
  - ±0.0024
- ±0.0012
- ±0.0006

**Repeatability as percentage of indexing accuracy**
- 30
- 25
- 20
- 20

**Runout of table top**
- centre bore
  - mm TIR
  - 0.040
- 0.018
- 0.010
- 0.005

**Max. wobble of table top**
- mm TIR
  - 0.030
- 0.015
- 0.009
- 0.005

**Parallelism: table top face/ mounting face**
- mm
  - 0.035
- 0.020
- 0.012
- 0.008

**Parallelism: base tenon/ table top tenon**
- mm
  - 0.020
  - 0.006
  - 0.004
  - 0.004

#### 7. Face gear, number of teeth/divisions

<table>
<thead>
<tr>
<th>Block 7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

**Standard number of teeth**
- 72

**Max. 96**

**Divisions obtainable**
- 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72

**Required division “T...”**
- to be completed when ordering

#### 8. Operating data

<table>
<thead>
<tr>
<th>Block 8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

**Pressure medium**
- air

**Working pressure**
- bar
- 5
- (min. 5, max. 8)

**Air consumption per cycle**
- l
- 1.4
- T4

**Table lift**
- mm approx. 4

**Shipping weight (table dia. 160 mm)**
- kg approx. 25

#### 9. Indexing time (at working pressure 6 bar)

<table>
<thead>
<tr>
<th>Block 9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

**Index**
- 1
- 2
- 3
- 4
- 6
- 8

**Mass moment of inertia (max.)**
- kgm²
  - 0.13

**Indexing time**
- (unclamp, rotate, clamp)
  - s
  - 1.4
  - 1.0
  - 0.8
  - 0.7
  - 0.65

**Indexing frequency**
- per min⁻¹
  - 23
  - 37
  - 45
  - 52
  - 59

**Mass moment of inertia (max.)**
- kgm²
  - 0.09

**Indexing time**
- (unclamp, rotate, clamp)
  - s
  - 1.35
  - 0.95
  - 0.75
  - 0.65
  - 0.60

**Indexing frequency**
- per min⁻¹
  - 30
  - 38
  - 46
  - 54
  - 62

---

Example of ordering code number: 11.11.1. T... Right of alterations reserved.
10. Loading data (at working pressure 6 bar)

Machining forces – against clamped table top:
- machining thrust perpendicular to table top within 160 mm: \( N = 12,500 \)
- tangential moment: \( Nm = 205 \)
- tilting moment: \( Nm = 392 \)

Table loads – carried on horizontal table top:
- load, carried within 160 mm dia.: \( kg = 40 \)
- mass moment of inertia of table load: \( kgm^2 = 0.13 \)
- moment of eccentric load: \( Nm = 70 \)

Table loads – carried on vertical table top:
- load, carried within 160 mm dia.: \( kg = 16 \)
- mass moment of inertia of table load: \( kgm^2 = 0.13 \)
- torque of table load: \( Nm = 39 \)
- moment of eccentric load: \( Nm = 70 \)
- table load with tailstock: \( kg = 40 \)

11. Dimensions
### 1. Type designation

**FIBROTAKT** "indexing with lifting table top"

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard, Pneumatic Indexing Table, with internal control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>2</td>
</tr>
<tr>
<td>working position</td>
<td>any</td>
</tr>
</tbody>
</table>

### 2. Table top dimensions

<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>round</td>
<td>200 mm</td>
</tr>
<tr>
<td>without Tee-slots</td>
<td>250 mm</td>
</tr>
<tr>
<td>Radial</td>
<td>17</td>
</tr>
<tr>
<td>with Tee-slots</td>
<td>13</td>
</tr>
<tr>
<td>Radial</td>
<td>17</td>
</tr>
</tbody>
</table>

to customer’s drawing [X]

### 3. Table clamping

pneumatic [X]

### 4. Rack + pinion drive

<table>
<thead>
<tr>
<th>Max. index angle</th>
<th>rotation direction</th>
<th>available for</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 180° (from 12)</td>
<td>standard: clockwise</td>
<td>T, U see point 5</td>
</tr>
<tr>
<td>up to 120° (from 13)</td>
<td>anti-clockwise</td>
<td>T, U</td>
</tr>
<tr>
<td>available for pendulum or multiple pendulum rotation</td>
<td>F</td>
<td></td>
</tr>
</tbody>
</table>

### 5. Change of index (see page 9)


### 6. Accuracy

(at pressure/diameter: 6 bar/200 mm)

<table>
<thead>
<tr>
<th>Class</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indexing accuracy seconds</td>
<td>±s</td>
<td>±12</td>
<td>±6</td>
<td>±3</td>
</tr>
<tr>
<td>Repeatability as percentage of indexing accuracy</td>
<td>%</td>
<td>30</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Runout of table top</td>
<td>TIR</td>
<td>0,040</td>
<td>0,018</td>
<td>0,010</td>
</tr>
<tr>
<td>Centre bore</td>
<td>mm</td>
<td>0,006</td>
<td>0,003</td>
<td>0,0015</td>
</tr>
<tr>
<td>Max. wobble of table top</td>
<td>mm</td>
<td>0,020</td>
<td>0,015</td>
<td>0,008</td>
</tr>
<tr>
<td>Parallelism: table top face/</td>
<td>mm</td>
<td>0,015</td>
<td>0,025</td>
<td>0,012</td>
</tr>
<tr>
<td>Mounting face</td>
<td>TIR</td>
<td>0,006</td>
<td>0,004</td>
<td>0,004</td>
</tr>
<tr>
<td>Parallelism: base tenon/</td>
<td>mm</td>
<td>0,020</td>
<td>0,006</td>
<td>0,004</td>
</tr>
<tr>
<td>Table top tenon</td>
<td>TIR</td>
<td>0,020</td>
<td>0,006</td>
<td>0,004</td>
</tr>
</tbody>
</table>

### 7. Face gear, number of teeth/divisions

| Standard number of teeth | 72 | Max. 120 |
| Required division "..." to be completed when ordering | |

### 8. Operating data

- Pressure medium: Air
- Working pressure: Bar 5 (min. 5, max. 8)
- Air consumption per cycle: L 2,1 (T4)
- Table lift: mm approx. 4
- Shipping weight (table dia. 200 mm): Kg approx. 37

### 9. Indexing time

(at working pressure 6 bar)

<table>
<thead>
<tr>
<th>Index</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>6</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass moment of inertia (max.)</td>
<td>Kg·m²</td>
<td>0,50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indexing time (unclamp, rotate, clamp)</td>
<td>s</td>
<td>1,6</td>
<td>1,2</td>
<td>1,0</td>
<td>0,9</td>
<td>0,8</td>
</tr>
<tr>
<td>Indexing frequency</td>
<td>per min⁻¹</td>
<td>25</td>
<td>35</td>
<td>38</td>
<td>43</td>
<td>46</td>
</tr>
<tr>
<td>Mass moment of inertia (⅔ max.)</td>
<td>Kg·m²</td>
<td>0,33</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indexing time (unclamp, rotate, clamp)</td>
<td>s</td>
<td>1,5</td>
<td>1,3</td>
<td>1,1</td>
<td>0,9</td>
<td>0,8</td>
</tr>
<tr>
<td>Indexing frequency</td>
<td>per min⁻¹</td>
<td>26</td>
<td>33</td>
<td>40</td>
<td>46</td>
<td>55</td>
</tr>
</tbody>
</table>
10. Loading data (at working pressure 6 bar)

Machining forces – against clamped table top:
| Machining thrust perpendicular to table top within 200 mm | N | 15,000 |
| Tangential moment | Nm | 205 |
| Tilting moment | Nm | 325 |

Table loads – carried on horizontal table top:
| Load, carried within 200 mm dia. | kg | 70 |
| Mass moment of inertia of table load | kgm² | 0.5 |
| Moment of eccentric load | Nm | 115 |

Table loads – carried on vertical table top:
| Load, carried within 200 mm dia. | kg | 28 |
| Torque of table load | Nm | 63 |
| Moment of eccentric load | Nm | – |
| Table load with tailstock | kg | 70 |

11. Dimensions

- U-rotary selector knob
- F-stop
- H 8 with accuracy class 4
- H 7 with accuracy class 3
- H 6 with accuracy class 2 and 1
- Oil filling entry
- Speed throttle for rack return
- Damping throttle
- Inspection plate
- G1⁄8 connection for pneumatic supply
- G1⁄8 connection for remote start valve
- Push button (start)
### 11.11.3. Technical data

#### 1. Type designation

<table>
<thead>
<tr>
<th>Type designation</th>
<th>Standard, Pneumatic Indexing Table, with internal control</th>
</tr>
</thead>
</table>

#### 2. Table top dimensions

<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
<th>Block 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>round without tee-slots</td>
<td>320 mm</td>
<td>400 mm</td>
</tr>
<tr>
<td>round with tee-slots radial</td>
<td>13</td>
<td>17 radial</td>
</tr>
</tbody>
</table>

#### 3. Table clamping

<table>
<thead>
<tr>
<th>Type</th>
<th>Block 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumatic</td>
<td>4</td>
</tr>
</tbody>
</table>

#### 4. Rack + pinion drive

<table>
<thead>
<tr>
<th>Max. index angle</th>
<th>Up to 180° (from 12)</th>
<th>Up to 120° (from 13)</th>
</tr>
</thead>
</table>

#### 5. Change of index (see page 9)

<table>
<thead>
<tr>
<th>Fixed division “F”</th>
<th>Variable division “U”</th>
<th>Max. 11 divisions</th>
</tr>
</thead>
</table>

#### 6. Accuracy

<table>
<thead>
<tr>
<th>Class</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indexing accuracy seconds</td>
<td>±0.5</td>
<td>±1.2</td>
<td>±0.6</td>
<td>±0.3</td>
</tr>
<tr>
<td>Repeatability as percentage of indexing accuracy</td>
<td>±0.01</td>
<td>±0.005</td>
<td>±0.0024</td>
<td>±0.0012</td>
</tr>
<tr>
<td>Runout of table top</td>
<td>%</td>
<td>30</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Centre bore</td>
<td>mm TIR</td>
<td>0.040</td>
<td>0.018</td>
<td>0.010</td>
</tr>
<tr>
<td>Max. wobble of table top</td>
<td>mm TIR</td>
<td>0.045</td>
<td>0.025</td>
<td>0.012</td>
</tr>
<tr>
<td>Parallelism: Table top face/mounting face</td>
<td>mm TIR</td>
<td>100</td>
<td>0.020</td>
<td>0.006</td>
</tr>
<tr>
<td>Parallelism: Base tenon/table top tenon</td>
<td>mm</td>
<td>100 mm TIR</td>
<td>0.045</td>
<td>0.025</td>
</tr>
</tbody>
</table>

#### 7. Face gear, number of teeth/divisions

<table>
<thead>
<tr>
<th>Standard number of teeth</th>
<th>96</th>
<th>Max. 144</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divisions obtainable</td>
<td>1, 2, 3, 4, 5, 6, 8, 12, 16, 24, 32, 48, 96</td>
<td></td>
</tr>
</tbody>
</table>

#### 8. Operating data

<table>
<thead>
<tr>
<th>Pressure medium</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working pressure</td>
<td>5 bar (min. 5, max. 8)</td>
</tr>
<tr>
<td>Air consumption per cycle</td>
<td>1.40 (T4)</td>
</tr>
<tr>
<td>Table lift</td>
<td>mm approx. 4</td>
</tr>
<tr>
<td>Shipping weight (table dia. 320 mm)</td>
<td>kg approx. 85</td>
</tr>
<tr>
<td>kg approx. 100</td>
<td></td>
</tr>
</tbody>
</table>

#### 9. Indexing time

<table>
<thead>
<tr>
<th>Indexing time (at working pressure 6 bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
</tr>
<tr>
<td>Mass moment of inertia (max.)</td>
</tr>
<tr>
<td>Indexing time (unclamp, rotate, clamp)</td>
</tr>
<tr>
<td>Indexing frequency</td>
</tr>
<tr>
<td>Mass moment of inertia (%% max.)</td>
</tr>
<tr>
<td>Indexing time (unclamp, rotate, clamp)</td>
</tr>
<tr>
<td>Indexing frequency</td>
</tr>
</tbody>
</table>
## 10. Loading data (at working pressure 6 bar)

<table>
<thead>
<tr>
<th>Machining forces – against clamped table top:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>machining thrust perpendicular to table top within 320 mm</td>
<td>N 20,000</td>
</tr>
<tr>
<td>tangential moment</td>
<td>Nm 2,300</td>
</tr>
<tr>
<td>tilting moment</td>
<td>Nm 1,280</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table loads – carried on horizontal table top:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>load, carried within 320 mm dia.</td>
<td>kg 350</td>
</tr>
<tr>
<td>mass moment of inertia of table load</td>
<td>kgm² 4.5</td>
</tr>
<tr>
<td>moment of eccentric load</td>
<td>Nm 400</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table loads – carried on vertical table top:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>load, carried within 320 mm dia.</td>
<td>kg 140</td>
</tr>
<tr>
<td>mass moment of inertia of table load</td>
<td>kgm² 4.5</td>
</tr>
<tr>
<td>torque of table load</td>
<td>Nm 225</td>
</tr>
<tr>
<td>moment of eccentric load</td>
<td>Nm –</td>
</tr>
</tbody>
</table>

## 11. Dimensions

- **G 1/8 connection** for pneumatic supply
- **H 8 with accuracy class 4**
- **H 7 with accuracy class 3**
- **H 6 with accuracy class 2 and 1**

- **U-rotary selector knob**
- **F-stop**
- **Damping throttle**
- **Oil filling entry**
- **Inspection plate**
- **Indexing speed throttle**
- **Push button** (start)

*for anti-clockwise rotation inverse to the centre axis*
## 11.11.4. Technical data

### 1. Type designation

<table>
<thead>
<tr>
<th>Type designation</th>
<th>“indexing with lifting table top”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard, Pneumatic Indexing Table, with internal control</td>
<td></td>
</tr>
</tbody>
</table>

### 2. Table top dimensions

<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
<th>Block 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>round</td>
<td>400 mm</td>
<td></td>
</tr>
<tr>
<td>without tee-slots</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>round</td>
<td>500 mm</td>
<td></td>
</tr>
<tr>
<td>with tee-slots</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>radial</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Radial</td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>

### 3. Table clamping

<table>
<thead>
<tr>
<th>Type</th>
<th>Pneumatic</th>
</tr>
</thead>
</table>

### 4. Rack + pinion drive

<table>
<thead>
<tr>
<th>Max. index angle</th>
<th>Up to 180° (from 12)</th>
<th>Up to 120° (from 13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotation direction</td>
<td>Available for</td>
<td>Available for</td>
</tr>
<tr>
<td>Standard: clockwise</td>
<td>F, U see point 5</td>
<td>F, U</td>
</tr>
<tr>
<td>Anti-clockwise</td>
<td>F, U</td>
<td>F, U</td>
</tr>
<tr>
<td>Pendulum or multiple</td>
<td>F</td>
<td>F</td>
</tr>
</tbody>
</table>

### 5. Change of index (see page 9)

<table>
<thead>
<tr>
<th>Fixed division “F”</th>
<th>Variable division “U”</th>
<th>Max. 11 divisions</th>
</tr>
</thead>
</table>

### 6. Accuracy

#### (at pressure/diameter: 6 bar/400 mm)

<table>
<thead>
<tr>
<th>Class</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Indexing accuracy seconds</th>
<th>1 s, ±12</th>
<th>±6</th>
<th>±3</th>
<th>±1.5</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Repeatability as percentage of indexing accuracy</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runout of table top</td>
<td>30</td>
</tr>
<tr>
<td>Centre bore</td>
<td>25</td>
</tr>
<tr>
<td>Max. wobble of table top</td>
<td>20</td>
</tr>
<tr>
<td>Parallelism: table top face/mounting face</td>
<td>20</td>
</tr>
<tr>
<td>Parallelism: base tenon/table top tenon</td>
<td>20</td>
</tr>
</tbody>
</table>

### 7. Face gear, number of teeth/divisions

<table>
<thead>
<tr>
<th>Standard number of teeth</th>
<th>96</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divisions obtainable</td>
<td>7, 3, 4, 6, 12, 16, 24, 32, 48, 96</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Required division “...” to be completed when ordering</th>
</tr>
</thead>
</table>

### 8. Operating data

<table>
<thead>
<tr>
<th>Pressure medium</th>
<th>Air</th>
<th>Working pressure bar</th>
<th>5 (min. 5, max. 8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air consumption per cycle</td>
<td>l</td>
<td>6.5 (T 4)</td>
<td></td>
</tr>
<tr>
<td>Table lift</td>
<td>mm/ approx. 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shipping weight (table dia. 400 mm) kg</td>
<td>approx. 180</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500 kg</td>
<td>approx. 225</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9. Indexing time

#### (at working pressure 6 bar)

<table>
<thead>
<tr>
<th>Index</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass moment of inertia</td>
<td>(max.)</td>
<td>kg m²</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indexing time</td>
<td>Unclamp, rotate, clamp</td>
<td>s</td>
<td>2.6</td>
<td>2.3</td>
<td>2.1</td>
<td>2.0</td>
<td>1.9</td>
</tr>
<tr>
<td>Indexing frequency</td>
<td>min⁻¹</td>
<td>15</td>
<td>17</td>
<td>19</td>
<td>21</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Mass moment of inertia</td>
<td>(1/3 max.)</td>
<td>kg m²</td>
<td>6.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indexing time</td>
<td>Unclamp, rotate, clamp</td>
<td>s</td>
<td>2.4</td>
<td>2.1</td>
<td>1.9</td>
<td>1.8</td>
<td>1.7</td>
</tr>
<tr>
<td>Indexing frequency</td>
<td>min⁻¹</td>
<td>16</td>
<td>18</td>
<td>20</td>
<td>23</td>
<td>26</td>
<td></td>
</tr>
</tbody>
</table>
10. Loading data (at working pressure 6 bar)

**Machining forces – against clamped table top:**
- Machining thrust perpendicular to table top within 400 mm: N 30,000
- Tangential moment: Nm 5000
- Tilting moment: Nm 2700

**Table loads – carried on horizontal table top:**
- Load, carried within 400 mm dia.: kg 500
- Mass moment of inertia of table load: kgm² 10
- Moment of eccentric load: Nm 700

**Table loads – carried on vertical table top:**
- Load, carried within 400 mm dia.: kg 200
- Torque of table load: Nm 540
- Moment of eccentric load: Nm 79
- Table load with tailstock: kg 500

11. Dimensions

- U-rotary selector knob
- F-stop
- Oil filling entry
- Damping throttle
- Inspection plate

*for anti-clockwise rotation inverse to the centre axis

Right of alterations reserved
11.12.2. Technical data

1. Type designation

<table>
<thead>
<tr>
<th>Type designation</th>
<th>Standard, Pneumatic Indexing Table, with external control</th>
</tr>
</thead>
</table>

2. Table top dimensions

<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>round</td>
<td>200 mm</td>
</tr>
<tr>
<td>without Tee-slots</td>
<td>17</td>
</tr>
<tr>
<td>round</td>
<td>250 mm</td>
</tr>
<tr>
<td>with Tee-slots</td>
<td>15</td>
</tr>
<tr>
<td>Radial</td>
<td>17</td>
</tr>
<tr>
<td>Radial</td>
<td></td>
</tr>
</tbody>
</table>

3. Table clamping

<table>
<thead>
<tr>
<th>Clamping method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumatic</td>
</tr>
</tbody>
</table>

4. Rack + pinion drive

<table>
<thead>
<tr>
<th>Rotation direction</th>
<th>available for</th>
<th>available for</th>
</tr>
</thead>
<tbody>
<tr>
<td>standard: clockwise</td>
<td>T, U see point 5</td>
<td>F</td>
</tr>
<tr>
<td>anti-clockwise</td>
<td>T, U</td>
<td>D4</td>
</tr>
<tr>
<td>clockwise and anti-clockwise, multiple</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>pendulum only</td>
<td>F</td>
<td>F</td>
</tr>
</tbody>
</table>

5. Change of index (see page 9)

<table>
<thead>
<tr>
<th>Change of index</th>
<th>fixed division &quot;F&quot;</th>
<th>variable division &quot;U&quot;</th>
<th>max. 11 divisions</th>
</tr>
</thead>
</table>

6. Accuracy

<table>
<thead>
<tr>
<th>Class</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indexing accuracy seconds</td>
<td>±0.5</td>
<td>±0.12</td>
<td>±0.6</td>
<td>±0.3</td>
</tr>
<tr>
<td>Repeatability as percentage of indexing accuracy</td>
<td>0%</td>
<td>30%</td>
<td>25%</td>
<td>20%</td>
</tr>
<tr>
<td>Runout of table top centre bore</td>
<td>mm TH</td>
<td>0.040</td>
<td>0.018</td>
<td>0.010</td>
</tr>
<tr>
<td>Max. wobble of table top</td>
<td>mm TH</td>
<td>0.000</td>
<td>0.0005</td>
<td></td>
</tr>
<tr>
<td>Parallelism: table top face/ mounting face</td>
<td>mm</td>
<td>0.035</td>
<td>0.025</td>
<td>0.012</td>
</tr>
<tr>
<td>Parallelism: base tenon/ table top tenon</td>
<td>mm</td>
<td>0.002</td>
<td>0.006</td>
<td>0.004</td>
</tr>
</tbody>
</table>

7. Face gear, number of teeth/divisions

<table>
<thead>
<tr>
<th>Standard number of teeth</th>
<th>72</th>
<th>max. 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divisions obtainable</td>
<td>T, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72</td>
<td></td>
</tr>
<tr>
<td>Required division &quot;F...&quot; to be completed when ordering</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. Operating data

<table>
<thead>
<tr>
<th>Pressure medium</th>
<th>air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working pressure</td>
<td>bar</td>
</tr>
<tr>
<td>Air consumption per cycle</td>
<td>l</td>
</tr>
<tr>
<td>Table lift</td>
<td>mm approx.</td>
</tr>
<tr>
<td>Shipping weight (table dia. 200 mm)</td>
<td>kg approx.</td>
</tr>
</tbody>
</table>

9. Indexing time (at working pressure 6 bar)

<table>
<thead>
<tr>
<th>Index</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass moment of inertia (max.)</td>
<td>kgm²</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indexing time (unclamp, rotate, clamp)</td>
<td>s</td>
<td>1.8</td>
<td>1.2</td>
<td>1.0</td>
<td>0.9</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>Indexing frequency</td>
<td>min⁻¹</td>
<td>25</td>
<td>35</td>
<td>38</td>
<td>43</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Mass moment of inertia (½ max.)</td>
<td>kgm²</td>
<td>0.33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indexing time (unclamp, rotate, clamp)</td>
<td>s</td>
<td>1.5</td>
<td>1.1</td>
<td>0.9</td>
<td>0.8</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>Indexing frequency</td>
<td>min⁻¹</td>
<td>28</td>
<td>33</td>
<td>40</td>
<td>46</td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>
10. Loading data (at working pressure 6 bar)

- Machining forces – against clamped table top:
  - Machining thrust perpendicular to table top within 200 mm: N 15,000
  - Tangential moment: Nm 602
  - Tilting moment: Nm 325

- Table loads – carried on horizontal table top:
  - Load, carried within 200 mm dia.: kg 70
  - Mass moment of inertia of table load: kgm² 0.5
  - Moment of eccentric load: Nm 115

- Table loads – carried on vertical table top:
  - Load, carried within 200 mm dia.: kg 28
  - Torque of table load: Nm 62
  - Moment of eccentric load: Nm ~
  - Table load with tailstock: kg 70

11. Dimensions

- Machining forces – against clamped table top:
  - Machining thrust perpendicular to table top within 200 mm: N 15,000
  - Tangential moment: Nm 602
  - Tilting moment: Nm 325

- Table loads – carried on horizontal table top:
  - Load, carried within 200 mm dia.: kg 70
  - Mass moment of inertia of table load: kgm² 0.5
  - Moment of eccentric load: Nm 115

- Table loads – carried on vertical table top:
  - Load, carried within 200 mm dia.: kg 28
  - Torque of table load: Nm 62
  - Moment of eccentric load: Nm ~
  - Table load with tailstock: kg 70

- Filling table top (pneum.):
  - G½ entry for external valve exhaust
  - Oil filling entry*
  - Damping throttle*
  - Speed throttle for rack return
  - Indexing speed throttle*
  - U-rotary selector knob*
  - Inspection plate

* for anti-clockwise rotation inverse to the centre axis

Right of alterations reserved
11.12.3. Technical data

1. Type designation
   "indexing with lifting table top"
   Standard, Pneumatic Indexing Table, with external control

2. Table top dimensions
   Table top execution | Table top dimension
   ____ | ______ |
   round | without Tee-slots | 320 mm | 400 mm
   round | with Tee-slots | radial | radial

to customer’s drawing

3. Table clamping
   pneumatic

4. Rack + pinion drive
   max. index angle
   rotation direction | available for
   standard: clockwise | F
   anti-clockwise | U
   clockwise and anti-clockwise, multiple

5. Change of index (see page 9)
   fixed division “F” | variable division “U” | max. 11 divisions

6. Accuracy (at pressure/diameter: 6 bar/320 mm)
   Class | 1 | 2 | 3 | 4
   indexing accuracy seconds | ±1,5 | ±1,2 | ±1 | ±0,5
   repeatability as percentage of indexing accuracy | ±1,5 | ±1,2 | ±1 | ±0,5
   runout of table top centre bore | mm TIR | 0,040 | 0,018 | 0,010 | 0,005
   max. wobble of table top | mm TIR | 0,045 | 0,025 | 0,012 | 0,008
   parallelism: table top face/mounting face | mm TIR | 0,045 | 0,025 | 0,012 | 0,008
   parallelism: base tenon/table top tenon | mm TIR | 0,020 | 0,006 | 0,004 | 0,004

7. Face gear, number of teeth/divisions
   Standard number of teeth | 96 | max. 144
   divisions obtainable | 3, 4, 6, 8, 12, 16, 24, 32, 48, 96
   Required division “T…” to be completed when ordering

8. Operating data
   pressure medium | air
   working pressure | bar | 5 | (min. 5, max. 8)
   air consumption per cycle | l | 4,0 | (T4)
   table lift | mm approx. | 4
   shipping weight (table dia. 320 mm) kg approx. | 85 | 100

9. Indexing time (at working pressure 6 bar)
   Index | 1 | 2 | 3 | 4 | 5 | 6 | 7
   mass moment of inertia (max.) | kgm² | 4,5
   indexing time (unclamp, rotate, clamp) | s | 2,1 | 1,7 | 1,5 | 1,4 | 1,3
   indexing frequency | min⁻¹ | 19 | 24 | 28 | 31 | 34
   mass moment of inertia (% max.) | kgm² | 3,0
   indexing time (unclamp, rotate, clamp) | s | 1,9 | 1,5 | 1,3 | 1,2 | 1,1
   indexing frequency | min⁻¹ | 21 | 26 | 30 | 34 | 38
10. Loading data (at working pressure 6 bar)

Machining forces – against clamped table top:
- Machining thrust perpendicular to table top within 320 mm diameter: N 20,000
- Tangential moment: Nm 2,200
- Tilting moment: Nm 1,280

Table loads – carried on horizontal table top:
- Load, carried within 320 mm diameter: kg 350
- Mass moment of inertia of table load: kgm² 4,3
- Moment of eccentric load: Nm 400

11. Dimensions

- Indexing speed throttle
- Oil filling entry
- Damping throttle
- U-rotary selector knob
- Speed throttle for rack return
- Plug-in connection for limit switches
- G 3/8 entry for external valve exhaust

Technical data 11.12.3.
11.12.4. Technical data

1. Type designation

<table>
<thead>
<tr>
<th>11.12.4. Type designation</th>
<th>Block 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIBROTAKT “indexing with lifting table top”</td>
<td>[11, 12, 4.]</td>
</tr>
<tr>
<td>Standard, Pneumatic Indexing Table, with external control</td>
<td></td>
</tr>
</tbody>
</table>

2. Table top dimensions

<table>
<thead>
<tr>
<th>2. Table top dimensions</th>
<th>Block 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table top execution</td>
<td>Table top dimension</td>
</tr>
<tr>
<td>round</td>
<td>without tee-slots</td>
</tr>
<tr>
<td></td>
<td>with tee-slots</td>
</tr>
<tr>
<td>radial</td>
<td>radial</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Table clamping

<table>
<thead>
<tr>
<th>3. Table clamping</th>
<th>Block 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>pneumatic</td>
<td>4</td>
</tr>
</tbody>
</table>

4. Rack + pinion drive

<table>
<thead>
<tr>
<th>4. Rack + pinion drive</th>
<th>Block 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. index angle</td>
<td>up to 180° (from 12)</td>
</tr>
<tr>
<td>rotation direction</td>
<td>available for</td>
</tr>
<tr>
<td>standard: clockwise</td>
<td>F, U see point 5</td>
</tr>
<tr>
<td>anti-clockwise</td>
<td>F, U</td>
</tr>
<tr>
<td>clockwise and anti-clockwise, multiple</td>
<td>37 F</td>
</tr>
<tr>
<td>pendulum only</td>
<td>27 F</td>
</tr>
</tbody>
</table>

5. Change of index (see page 9)

<table>
<thead>
<tr>
<th>5. Change of index (see page 9)</th>
<th>Block 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>fixed division “F”</td>
<td>11</td>
</tr>
<tr>
<td>variable division “U”</td>
<td>21</td>
</tr>
<tr>
<td>max. 11 divisions</td>
<td></td>
</tr>
</tbody>
</table>

6. Accuracy

<table>
<thead>
<tr>
<th>6. Accuracy</th>
<th>Block 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>(at pressure/diameter: 6 bar/400 mm)</td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td>4</td>
</tr>
<tr>
<td>indexing accuracy seconds</td>
<td>±s</td>
</tr>
<tr>
<td>radians at dia. 400 mm</td>
<td>±0,012</td>
</tr>
<tr>
<td>repeatability as percentage of indexing accuracy</td>
<td>%</td>
</tr>
<tr>
<td>runout of table top centre bore</td>
<td>mm TIR</td>
</tr>
<tr>
<td>max. wobble of table top</td>
<td>mm TIR</td>
</tr>
<tr>
<td>parallelism: table top face/ mounting face</td>
<td>mm TIR</td>
</tr>
<tr>
<td>parallelism: base tenon/ table top tenon</td>
<td>mm/100 mm TIR</td>
</tr>
</tbody>
</table>

7. Face gear, number of teeth/divisions

<table>
<thead>
<tr>
<th>7. Face gear, number of teeth/divisions</th>
<th>Block 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard number of teeth</td>
<td>96</td>
</tr>
<tr>
<td>max. 360</td>
<td></td>
</tr>
<tr>
<td>divisions obtainable</td>
<td>2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 96</td>
</tr>
<tr>
<td>Required division “T…” to be completed when ordering</td>
<td></td>
</tr>
</tbody>
</table>

8. Operating data

<table>
<thead>
<tr>
<th>8. Operating data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>pressure medium</td>
<td>air</td>
</tr>
<tr>
<td>working pressure</td>
<td>bar</td>
</tr>
<tr>
<td>air consumption per cycle</td>
<td>l</td>
</tr>
<tr>
<td>table lift</td>
<td>mm approx.</td>
</tr>
<tr>
<td>shipping weight (table dia. 400 mm)</td>
<td>kg approx.</td>
</tr>
</tbody>
</table>

9. Indexing time (at working pressure 6 bar)

<table>
<thead>
<tr>
<th>9. Indexing time (at working pressure 6 bar)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>index</td>
<td>1</td>
</tr>
<tr>
<td>mass moment of inertia (max.) kgm²</td>
<td>10</td>
</tr>
<tr>
<td>indexing time (unclamp, rotate, clamp) s</td>
<td>2,6</td>
</tr>
<tr>
<td>indexing frequency min⁻¹</td>
<td>15</td>
</tr>
<tr>
<td>mass moment of inertia (% max.) kgm²</td>
<td>6,7</td>
</tr>
<tr>
<td>indexing time (unclamp, rotate, clamp) s</td>
<td>2,4</td>
</tr>
<tr>
<td>indexing frequency min⁻¹</td>
<td>16</td>
</tr>
</tbody>
</table>

Example of ordering code number [11, 12, 4. | | | | | | | | | | |] Right of alterations reserved
10. Loading data (at working pressure 6 bar)

Machining forces – against clamped table top:

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machining thrust perpendicular to table top within 400 mm</td>
<td>N 30,000</td>
</tr>
<tr>
<td>Tangential moment</td>
<td>Nm 5000</td>
</tr>
<tr>
<td>Tilting moment</td>
<td>Nm 2,700</td>
</tr>
</tbody>
</table>

Table loads – carried on horizontal table top:

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load, carried within 400 mm dia.</td>
<td>kg 500</td>
</tr>
<tr>
<td>Mass moment of inertia of table load</td>
<td>kgm² 10</td>
</tr>
<tr>
<td>Moment of eccentric load</td>
<td>Nm 700</td>
</tr>
</tbody>
</table>

Table loads – carried on vertical table top:

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load, carried within 400 mm dia.</td>
<td>kg 200</td>
</tr>
<tr>
<td>Mass moment of inertia of table load</td>
<td>kgm² 10</td>
</tr>
<tr>
<td>Torque of table load</td>
<td>Nm 540</td>
</tr>
<tr>
<td>Moment of eccentric load</td>
<td>Nm 79</td>
</tr>
<tr>
<td>Load table with tailstock</td>
<td>kg 500</td>
</tr>
</tbody>
</table>

11. Dimensions

U-rotary selector knob

- Oil filling entry
- Indexing speed throttle
- Damping throttle
- F-stop
- Speed throttle for rack return
- Plug-in connection for limit switches
- Inspection plate

G¼ entry for external valve exhaust

H 8 with accuracy class 4
H 7 with accuracy class 3
H 6 with accuracy class 2 and 1

G¼ No 1-4 pneumatic entries

Right of alterations reserved
11.12.5. Technical data

1. Type designation

   **FIBROTAKT** “indexing with lifting table top”

   **Standard, Pneumatic Indexing Table, with external control**

   **Type**
   - 5
   - working position
   - any

2. Table top dimensions

   **Table top execution**
   - round without Tee-slots
   - round with Tee-slots
   - to customer’s drawing

   **Table top dimension**
   - 500 mm 630 mm

3. Table clamping

   **pneumatic**

4. Rack + pinion drive

   **max. index angle**
   - up to 180° (from 12)
   - up to 120° (from 13)

   **rotation direction**
   - available for
   - standard: clockwise
   - anti-clockwise
   - clockwise and anti-clockwise, multiple
centre bore mm TIR
   - max. wobble of table top mm TIR
   - parallelism: table top face/ mounting face
   - parallelism: base tenon/ table top tenon

5. Change of index (see page 9)

   **fixed division “F”**
   - variable division “U”
   - max. 11 divisions

6. Accuracy

   (at pressure/diameter: 6 bar/500 mm)

   **Class**
   - 4
   - 3
   - 2
   - 1

   **indexing accuracy seconds**
   - ±0,12 ±0,016 ±0,004 ±0,002
   - ±0,6 ±0,008 ±0,004
   - ±3 ±0,002
   - ±1,5

   **repeatability as percentage of indexing accuracy**
   - ½ 30 25 20 20
   - mm ±0,002
   - mm ±0,010
   - mm ±0,005

   **runout of table top centre bore mm TIR**
   - max. wobble of table top mm TIR
   - parallelism: table top face/ mounting face
   - parallelism: base tenon/ table top tenon

7. Face gear, number of teeth/divisions

   **Standard number of teeth**
   - 120
   - max. 360

   **divisions obtainable**
   - 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120

   **Required division “T…” to be completed when ordering**

8. Operating data

   **pressure medium**
   - air
   - air consumption per cycle
   - 10,5 (T4)
   - table lift mm approx. 4
   - shipping weight (table dia. 500 mm)
   - kg approx. 325
   - kg approx. 405

9. Indexing time

   (at working pressure 6 bar)

   **Index**
   - 1
   - 2
   - 3
   - 4
   - 5
   - 6
   - 7

   **mass moment of inertia (max.) kgm²**
   - 25
   - 17

   **indexing time (unclamp, rotate, clamp) s**
   - 3.5
   - 3.1
   - 2.9
   - 2.7
   - 2.6

   **indexing frequency min⁻¹**
   - 11
   - 15
   - 14
   - 16
   - 18

   **mass moment of inertia (½ max.) kgm²**
   - 3.2
   - 2.8
   - 2.6
   - 2.4
   - 2.3

   **indexing time (unclamp, rotate, clamp) s**
   - 12
   - 14
   - 15
   - 17
   - 20
10. Loading data (at working pressure 6 bar)

Machining forces – against clamped table top:
- machining thrust perpendicular to table top within 500 mm dia. N 35,000
- tangential moment Nm 3,700
- tilting moment Nm 2,000

Table loads – carried on horizontal table top:
- load, carried within 500 mm dia. kg 630
- mass moment of inertia of table load kgm² 25
- moment of eccentric load Nm 800

Table loads – carried on vertical table top:
- load, carried within 500 mm dia. kg 250
- mass moment of inertia of table load kgm² 25
- torque of table load Nm 230
- moment of eccentric load Nm 150
- table load with tailstock kg 630

11. Dimensions

U-rotary selector knob*
F-stop*
speed throttle for rack return

indexing speed throttle*
damping throttle*

* for anti-clockwise rotation inverse to the centre axis

plug-in connection for limit switches

section A

oil filling entry*

G¼ entry for external valve exhaust

inspection plate

Technical data 11.12.5.
### Technical data

#### 1. Type designation

- **Type**: Standard, Pneumatic Indexing Table, with external control
- **Working position**: any

#### 2. Table top dimensions

<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
<th>Block 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round</td>
<td>630 mm</td>
<td>800 mm</td>
</tr>
<tr>
<td>Without tee-slots</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With tee-slots</td>
<td>13</td>
<td>Radial</td>
</tr>
<tr>
<td>Radial</td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>

To customer’s drawing: [ ]

#### 3. Table clamping

- **Pneumatic**: [ ]

#### 4. Rack + pinion drive

- **Max. index angle**: up to 180° (from T2) up to 120° (from T3)
- **Rotation direction available for**: standard: clockwise [ ] anti-clockwise [ ] clockwise and anti-clockwise, multiple pendulum only [ ]

#### 5. Change of index (see page 9)

- **Fixed division “F”**: [ ]
- **Variable division “U”**: [ ]
- **Max. 11 divisions**: [ ]

#### 6. Accuracy (at pressure/diameter: 6 bar/630 mm)

<table>
<thead>
<tr>
<th>Class</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indexing accuracy seconds</td>
<td>±1.5</td>
<td>±3</td>
<td>±6</td>
<td>±12</td>
</tr>
<tr>
<td>Repeatability as percentage of indexing accuracy</td>
<td>95</td>
<td>90</td>
<td>80</td>
<td>60</td>
</tr>
<tr>
<td>Runout of table top</td>
<td>mm TIR</td>
<td>0.040</td>
<td>0.018</td>
<td>0.010</td>
</tr>
<tr>
<td>Max. wobble of table top</td>
<td>mm TIR</td>
<td>0.050</td>
<td>0.025</td>
<td>0.015</td>
</tr>
</tbody>
</table>

#### 7. Face gear, number of teeth/divisions

- **Standard number of teeth**: 120 max. 360
- **Divisions obtainable**: 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120
- **Required division “T…” to be completed when ordering**

#### 8. Operating data

- **Pressure medium**: air
- **Working pressure**: bar 5 (min. 5, max. 8)
- **Air consumption per cycle**: l 11.5 (T4)
- **Table lift**: mm approx. 4
- **Shipping weight (table dia. 630 mm)**: kg approx. 510 800 kg approx. 610

#### 9. Indexing time (at working pressure 6 bar)

<table>
<thead>
<tr>
<th>Index</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>6</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass moment of inertia (max.)</td>
<td>kgm²</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indexing time (unclamp, rotate, clamp)</td>
<td>s</td>
<td>4.3</td>
<td>3.9</td>
<td>3.5</td>
<td>3.2</td>
<td>3.0</td>
</tr>
<tr>
<td>Indexing frequency</td>
<td>min⁻¹</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>14</td>
<td>15</td>
</tr>
</tbody>
</table>

Example of ordering code number: 11.12.6.
10. Loading data (at working pressure 6 bar)

Machining forces – against clamped table top:
- Machining thrust perpendicular to table top within 630 mm: N 40,000
- Tangential moment: Nm 7,000
- Tilting moment: Nm 4,000

Table loads – carried on horizontal table top:
- Load, carried within 630 mm dia.: kg 800
- Mass moment of inertia of table load: kgm² 40
- Moment of eccentric load: Nm 1,000

Table loads – carried on vertical table top:
- Load, carried within 630 mm dia.: kg 300
- Mass moment of inertia of table load: kgm² 40
- Torque of table load: Nm 630
- Moment of eccentric load: Nm 160
- Table load with tailstock: kg 800

11. Dimensions

- U-rotary selector knob*
- F-stop*
- Speed throttle for rack return
- Plug-in connection for limit switches
- Indexing speed throttle*
- Damping throttle*
- Oil filling entry*
- G 3⁄4 entry for external valve exhaust
- Inspection plate
- Stroke 4

### 11.13.2. Technical data

#### 1. Type designation

<table>
<thead>
<tr>
<th>Type designation</th>
<th>FIBROTAKT “indexing with lifting table top”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type description</td>
<td>Standard, Hydraulic Indexing Table, with external control</td>
</tr>
<tr>
<td>Size</td>
<td>2</td>
</tr>
</tbody>
</table>

**working position** any

#### 2. Table top dimensions

<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>round</td>
<td>200 mm</td>
</tr>
<tr>
<td>without Tee-slots</td>
<td>250 mm</td>
</tr>
<tr>
<td>round</td>
<td>Radial</td>
</tr>
<tr>
<td>with Tee-slots</td>
<td>17</td>
</tr>
<tr>
<td>radial</td>
<td>17</td>
</tr>
</tbody>
</table>

#### 3. Table clamping

<table>
<thead>
<tr>
<th>Table clamping</th>
</tr>
</thead>
<tbody>
<tr>
<td>hydraulic</td>
</tr>
</tbody>
</table>

#### 4. Rack + pinion drive

<table>
<thead>
<tr>
<th>max. index angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 180° (from 12)</td>
</tr>
<tr>
<td>up to 120° (from 3)</td>
</tr>
</tbody>
</table>

**rotation direction**

- standard: clockwise
- anti-clockwise
- clockwise and anti-clockwise, multiple

**rotation availability**

- available for
- available for

#### 5. Change of index (see page 9)

<table>
<thead>
<tr>
<th>Change of index</th>
</tr>
</thead>
<tbody>
<tr>
<td>fixed division “F”</td>
</tr>
<tr>
<td>variable division “U”</td>
</tr>
<tr>
<td>max. 11 divisions</td>
</tr>
</tbody>
</table>

#### 6. Accuracy

(at pressure/diameter: 30 bar/200 mm)

<table>
<thead>
<tr>
<th>Class</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>indexing accuracy seconds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;s</td>
<td>±12</td>
<td>±6</td>
<td>±3</td>
<td>±1,5</td>
</tr>
<tr>
<td>radians at dia. 200 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>±</td>
<td>±0,006</td>
<td>±0,003</td>
<td>±0,0015</td>
<td>±0,0008</td>
</tr>
<tr>
<td>repeatability as percentage of indexing accuracy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>½%</td>
<td>30</td>
<td>25</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>runout of table top centre bore</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mm TIR</td>
<td>0,040</td>
<td>0,018</td>
<td>0,010</td>
<td>0,005</td>
</tr>
<tr>
<td>max. wobble of table top</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mm TIR</td>
<td>0,040</td>
<td>0,018</td>
<td>0,010</td>
<td>0,005</td>
</tr>
<tr>
<td>parallelism: table top face/mounting face</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mm TIR</td>
<td>0,035</td>
<td>0,025</td>
<td>0,012</td>
<td>0,008</td>
</tr>
<tr>
<td>parallelism: base tenon/table top tenon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mm/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 mm TIR</td>
<td>0,020</td>
<td>0,006</td>
<td>0,004</td>
<td>0,004</td>
</tr>
</tbody>
</table>

#### 7. Face gear, number of teeth/divisions

- Standard number of teeth 72
- max. 120
- divisions obtainable 1, 2, 3, 4, 5, 6, 8, 9, 12, 18, 24, 36, 72
- Required division “T…” to be completed when ordering

#### 8. Operating data

<table>
<thead>
<tr>
<th>pressure medium</th>
<th>hydraulic oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>working pressure</td>
<td>30 bar</td>
</tr>
<tr>
<td>oil consumption per cycle</td>
<td>0,21 (T4)</td>
</tr>
<tr>
<td>table lift</td>
<td>approx. 4</td>
</tr>
<tr>
<td>shipping weight (table dia. 200 mm)</td>
<td>kg approx. 37 kg approx. 42</td>
</tr>
</tbody>
</table>

#### 9. Indexing time

(at working pressure 30 bar)

<table>
<thead>
<tr>
<th>Index</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>6</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>mass moment of inertia (max.) kgm²</td>
<td>0,75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>indexing time (unclamp, rotate, clamp) s</td>
<td>1,6</td>
<td>1,2</td>
<td>1,0</td>
<td>0,9</td>
<td>0,8</td>
<td></td>
</tr>
<tr>
<td>indexing frequency min⁻¹</td>
<td>25</td>
<td>32</td>
<td>38</td>
<td>43</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>mass moment of inertia (½ max.) kgm²</td>
<td>0,50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>indexing time (unclamp, rotate, clamp) s</td>
<td>1,5</td>
<td>1,1</td>
<td>0,9</td>
<td>0,8</td>
<td>0,7</td>
<td></td>
</tr>
<tr>
<td>indexing frequency min⁻¹</td>
<td>26</td>
<td>33</td>
<td>40</td>
<td>46</td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>
10. Loading data (at working pressure 30 bar)

Machining forces – against clamped table top:
- Machining thrust perpendicular to table top within 200 mm N 15000
- Tangential moment Nm 1300
- Tilting moment Nm 940

Table loads – carried on horizontal table top:
- Load, carried within 200 mm dia. kg 100
- Mass moment of inertia of table load kgm² 0.75
- Moment of eccentric load Nm 170

Table loads – carried on vertical table top:
- Load, carried within 200 mm dia. kg 40
- Torque of table load Nm 92
- Moment of eccentric load Nm –
- Table load with tailstock kg 100

11. Dimensions

H 8 with accuracy class 4
H 7 with accuracy class 3
H 6 with accuracy class 2 and 1

G1/4 No 1–4 hydraulic entries

U-rotary selector knob*
Damping throttle*
Indexing speed throttle*
G1/2 Connection for ventilation or connection for air purge (G1/2)

*for anti-clockwise rotation inverse to the centre axis

Right of alterations reserved
11.13.3. Technical data

1. Type designation
   **FIBROTAKT**
   "indexing with lifting table top"

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard, Hydraulic Indexing Table, with external control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>3</td>
</tr>
</tbody>
</table>

2. Table top dimensions

<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>round</td>
<td>320 mm</td>
</tr>
<tr>
<td>without Tee-slots</td>
<td>400 mm</td>
</tr>
<tr>
<td>radial</td>
<td>17</td>
</tr>
<tr>
<td>round</td>
<td>13</td>
</tr>
<tr>
<td>with Tee-slots</td>
<td>17</td>
</tr>
<tr>
<td>radial</td>
<td>17</td>
</tr>
</tbody>
</table>

   to customer’s drawing

3. Table clamping
   hydraulic

4. Rack + pinion drive

   max. index angle: up to 180° (from 12) up to 120° (from 13)

<table>
<thead>
<tr>
<th>rotation direction</th>
<th>available for</th>
<th>available for</th>
</tr>
</thead>
<tbody>
<tr>
<td>standard: clockwise</td>
<td>T, U see point 5</td>
<td>F</td>
</tr>
<tr>
<td>anti-clockwise</td>
<td>T, U</td>
<td>F</td>
</tr>
<tr>
<td>clockwise and anti-clockwise, multiple</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>pendulum only</td>
<td>F</td>
<td>F</td>
</tr>
</tbody>
</table>

5. Change of index (see page 9)

<table>
<thead>
<tr>
<th>fixed division “F”</th>
<th>variable division “U”</th>
<th>max. 11 divisions</th>
</tr>
</thead>
</table>

6. Accuracy

   (at pressure/diameter: 30 bar/320 mm)

<table>
<thead>
<tr>
<th>Class</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>indexing accuracy seconds</td>
<td>≤0,5</td>
<td>≤0,12</td>
<td>≤0,6</td>
<td>≤0,3</td>
</tr>
<tr>
<td>radianals at dia. 320 mm</td>
<td>≤0,001</td>
<td>≤0,005</td>
<td>≤0,0005</td>
<td>≤0,00024</td>
</tr>
<tr>
<td>repeatability as percentage of indexing accuracy</td>
<td>5%</td>
<td>30</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>runout of table top centre bore</td>
<td>mm TIR</td>
<td>0,040</td>
<td>0,018</td>
<td>0,010</td>
</tr>
<tr>
<td>max. wobble of table top</td>
<td>mm TIR</td>
<td>0,005</td>
<td>0,001</td>
<td>0,0008</td>
</tr>
<tr>
<td>parallelism: table top face/ mounting face</td>
<td>mm TIR</td>
<td>0,045</td>
<td>0,025</td>
<td>0,012</td>
</tr>
<tr>
<td>parallelism: base tenon/ table top tenon</td>
<td>mm TIR</td>
<td>0,020</td>
<td>0,006</td>
<td>0,004</td>
</tr>
</tbody>
</table>

7. Face gear, number of teeth/divisions

<table>
<thead>
<tr>
<th>standard number of teeth</th>
<th>96</th>
<th>max. 144</th>
</tr>
</thead>
<tbody>
<tr>
<td>divisions obtainable</td>
<td>7, 3, 4, 6, 8, 12, 16, 24, 32, 48, 96</td>
<td></td>
</tr>
</tbody>
</table>

   Required division "F..." to be completed when ordering

8. Operating data

<table>
<thead>
<tr>
<th>pressure medium</th>
<th>hydraulic oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>working pressure</td>
<td>bar</td>
</tr>
<tr>
<td>oil consumption per cycle</td>
<td>l/</td>
</tr>
<tr>
<td>table lift</td>
<td>mm approx.</td>
</tr>
<tr>
<td>shipping weight (table dia. 320 mm)</td>
<td>kg approx.</td>
</tr>
</tbody>
</table>

9. Indexing time

   (at working pressure 30 bar)

<table>
<thead>
<tr>
<th>Index</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>6</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>mass moment of inertia (max.)</td>
<td>kgm²</td>
<td>6,6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>indexing time (unclamp, rotate, clamp)</td>
<td>s</td>
<td>2,1</td>
<td>1,7</td>
<td>1,5</td>
<td>1,4</td>
<td>1,3</td>
</tr>
<tr>
<td>indexing frequency</td>
<td>min⁻¹</td>
<td>19</td>
<td>24</td>
<td>28</td>
<td>31</td>
<td>34</td>
</tr>
<tr>
<td>mass moment of inertia (½ max.)</td>
<td>kgm²</td>
<td>4,4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>indexing time (unclamp, rotate, clamp)</td>
<td>s</td>
<td>1,9</td>
<td>1,5</td>
<td>1,3</td>
<td>1,2</td>
<td>1,1</td>
</tr>
<tr>
<td>indexing frequency</td>
<td>min⁻¹</td>
<td>21</td>
<td>26</td>
<td>30</td>
<td>34</td>
<td>38</td>
</tr>
</tbody>
</table>

Example of ordering code number

<table>
<thead>
<tr>
<th>Block 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>13</td>
<td>3</td>
<td>.</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
</tbody>
</table>

Right of alterations reserved
10. Loading data (at working pressure 30 bar)

Machining forces – against clamped table top:
- Machining thrust perpendicular to table top within 320 mm: \( N = 20000 \)
- Tangential moment: \( Nm = 3000 \)
- Tilting moment: \( Nm = 3000 \)

Table loads – carried on horizontal table top:
- Load, carried within 320 mm dia.: \( k = 500 \)
- Mass moment of inertia of table load: \( kgm^2 = 6,6 \)
- Moment of eccentric load: \( Nm = 600 \)

Table loads – carried on vertical table top:
- Load, carried within 320 mm dia.: \( k = 200 \)
- Torque of table load: \( Nm = 335 \)
- Moment of eccentric load: \( Nm = - \)
- Table load with tailstock: \( k = 500 \)

11. Dimensions

- F-stop*
- U-rotary selector knob*
- G\(\frac{3}{4}\) Connection for ventilation or connection for air purge (G\(\frac{3}{4}\))
- Damping throttle*
- Indexing speed throttle*
- For anti-clockwise rotation inverse to the centre axis

Right of alterations reserved
11.13.4. Technical data

1. Type designation
   "indexing with lifting table top"

   Type
   Standard, Hydraulic Indexing Table, with external control

   Size
   4

   Working position
   any

2. Table top dimensions

<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round</td>
<td>400 mm / 300 mm</td>
</tr>
<tr>
<td>Radial</td>
<td>17 mm / 17 mm</td>
</tr>
<tr>
<td>Round</td>
<td>13 mm / 17 mm</td>
</tr>
<tr>
<td>Radial</td>
<td>17 mm / 17 mm</td>
</tr>
</tbody>
</table>

   to customer's drawing [X]

3. Table clamping

   | | |
   | | |
   | Hydraulic | [X] |

4. Rack + pinion drive

   | | | |
   | | | |
   | Max. index angle | up to 180° (from 12) | up to 120° (from 13) |
   | Rotation direction | available for | available for |
   | Standard: clockwise | F, U see point 5 | F, U |
   | Anti-clockwise | F, U |
   | Clockwise and anti-clockwise, multiple | F |

   | Fixed division "F" | Variable division "U" | Max. 11 divisions |

5. Change of index (see page 9)

   | Fixed division "F" | Variable division "U" |

6. Accuracy

   (at pressure/diameter: 30 bar/400 mm)

   | Class | 4 | 3 | 2 | 1 |
   | Indexing accuracy seconds | ±0.5 | ±1.2 | ±2 | ±3 | ±5 |
   | Repeatability as percentage of indexing accuracy | ±0.012 | ±0.006 | ±0.003 | ±0.005 |
   | Runout of table top | mm TIR | 0.040 | 0.016 | 0.010 | 0.005 |
   | Maximum wobble of table top | mm TIR | 0.040 | 0.020 | 0.008 | 0.005 |
   | Parallelism: Table top face/ mounting face | mm TIR | 0.050 | 0.025 | 0.012 | 0.008 |
   | Parallelism: Base tenon/ Table top tenon | mm TIR | 0.020 | 0.006 | 0.004 | 0.004 |

7. Face gear, number of teeth/divisions

   Standard number of teeth | 96 | Max. 360 |
   Divisions obtainable 1, 2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 96 |
   Required division "T..." to be completed when ordering |

8. Operating data

   Pressure medium | Hydraulic oil |
   Working pressure | Bar | 30 |
   Oil consumption per cycle | l | 0.64 (T4) |
   Table lift | mm approx. 4 |
   Shipping weight (table dia. 400 mm) | kg approx. | 180 | ≤500 | kg approx. | 225 |

9. Indexing time (at working pressure 30 bar)

   | Index | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
   | Mass moment of inertia | (max.) kgm² | 15 |
   | Indexing time (unclamp, rotate, clamp) | s | 2.6 | 2.3 | 2.1 | 2.0 | 1.9 |
   | Indexing frequency | min⁻¹ | 15 | 17 | 19 | 21 | 24 |
   | Mass moment of inertia | (√/max.) kgm² | 16 |
   | Indexing time (unclamp, rotate, clamp) | s | 2.4 | 2.1 | 1.9 | 1.8 | 1.7 |
   | Indexing frequency | min⁻¹ | 16 | 18 | 20 | 23 | 26 |

Example of ordering code number:

[11.13.4. 2 3 4 5 6 7 T...]

Right of alterations reserved
10. Loading data (at working pressure 30 bar)

Machining forces – against clamped table top:
- machining thrust perpendicular to table top within 400 mm dia. N 30000
- tangential moment Nm 12 000
- tilting moment Nm 7000

Table loads – carried on horizontal table top:
- load, carried within 400 mm dia. kg 750
- mass moment of inertia of table load kgm² 15
- moment of eccentric load Nm 1000

Table loads – carried on vertical table top:
- load, carried within 400 mm dia. kg 300
- torque of table load Nm 800
- moment of eccentric load Nm 390
- table load with tailstock kg 750

11. Dimensions

- U-rotary selector knob
- indexing speed throttle
- damping throttle
- F-stop
- plug-in connection for limit switches
- lifting table top (hydr.)
- G½ Connection for ventilation or connection for air purge (G½)

Right of alterations reserved
11.13.5. **Technical data**

1. **Type designation**
   - FIBROTAKT
   - "indexing with lifting table top"
   - **Type** Standard, Hydraulic Indexing Table, with external control
   - **Size** 5
   - working position any

2. **Table top dimensions**
   - **Table top execution**
     - round without tee-slots
     - round with tee-slots
   - **Table top dimension**
     - 500 mm 830 mm
   - radial

3. **Table clamping**
   - hydraulic

4. **Rack + pinion drive**
   - max. index angle: up to 180° (from 12) up to 120° (from 13)
   - rotation direction available for
     - standard: clockwise
     - anti-clockwise
     - clockwise and anti-clockwise, multiple
   - fixed division "F" variable division "U" max. 11 divisions

5. **Change of index (see page 9)**
   - fixed division “F” variable division “U” max. 11 divisions

6. **Accuracy** (at pressure/diameter: 30 bar/500 mm)
   - Class
     - ±1,5
   - indexing accuracy seconds
     - ±6 ±3 ±1,5
   - repeatability as percentage of indexing accuracy
     - ±0,004 ±0,002
   - runout of table top
     - mm 0,040 0,018 0,010 0,005
   - max. wobble of table top
     - mm 0,020 0,006 0,004
   - parallelism: table top face/ mounting face
     - mm 0,050 0,010 0,005
   - parallelism: base tenon/ table top tenon
     - mm 0,020 0,004

7. **Face gear, number of teeth/divisions**
   - Standard number of teeth 120 max. 360
   - divisions obtainable 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60
   - Required division “T…” to be completed when ordering

8. **Operating data**
   - pressure medium hydraulic oil
   - working pressure bar 30
   - oil consumption per cycle l 1,12
   - table lift mm approx. 4
   - shipping weight (table dia. 500 mm) kg approx. 325

9. **Indexing time** (at working pressure 30 bar)
   - index
     - 1 2 3 4 6 8
     - mass moment of inertia (max.) kgm² 45
     - indexing time (unclamp, rotate, clamp) s
       - 3,3 3,1 2,7 2,4 2,3
     - indexing frequency min⁻¹
       - 12 14 16 19 21
   - mass moment of inertia (min/max.) kgm² 36
   - indexing time (unclamp, rotate, clamp) s
     - 3,4 3,2 2,8 2,3 2,2
   - indexing frequency min⁻¹
     - 12 14 17 20 22

Example of ordering code number 11.13.5. ...
10. Loading data (at working pressure 30 bar)

Machining forces – against clamped table top:
- Machining thrust perpendicular to table top within 500 mm: N 35,000
- Tangential moment: Nm 17,000
- Tilting moment: Nm 10,400

Table loads – carried on horizontal table top:
- Load, carried within 500 mm dia.: kg 1000
- Mass moment of inertia of table load: kgm² 45
- Moment of eccentric load: Nm 1200

Table loads – carried on vertical table top:
- Load, carried within 500 mm dia.: kg 400
- Torque of table load: Nm 660
- Moment of eccentric load: Nm 740
- Table load with tailstock: kg 1000

11. Dimensions

- U-rotary selector knob*
- Damping throttle*
- Indexing speed throttle*
- F-stop*
- G 1⁄4 No 1–4 hydraulic entries
- G 1⁄4 Connection for ventilation or connection for air purge (G 1⁄4)
- *for anti-clockwise rotation inverse to the centre axis

Right of alterations reserved
11.13.6. Technical data

1. Type designation
   FIBROTAKT
   "indexing with lifting table top"
   Standard, Hydraulic Indexing Table, with external control
   Type
   working position
   any

2. Table top dimensions
   Table top execution
   Table top dimension
   round without Tee-slots 630 mm 800 mm
   round with Tee-slots 13 Radial 17 radial
   to customer's drawing 10

3. Table clamping
   hydraulic

4. Rack + pinion drive
   max. index angle
   rotation direction
   available for
   standard: clockwise 11 T, U see point 5 01 T, U
   anti-clockwise 13 T, U 04 T, U
   clockwise and anti-clockwise, multiple 37 T 27 T
   pendulum only 37 T 27 T

5. Change of index (see page 9)
   fixed division “F”
   variable division “U”
   max. 11 divisions

6. Accuracy
   (at pressure/diameter: 30 bar/630 mm)
   Class
   indexing accuracy seconds ±4 ±3 ±2 ±1
   radians at dia. 630 mm ±0.02 ±0.01 ±0.005 ±0.0025
   repeatability as percentage of indexing accuracy 1% 5% 10% 20% 20%
   runout of table top centre bore mm TIR 0.040 0.018 0.010 0.005
   max. wobble of table top mm TIR 0.025 0.015 0.008 0.004
   parallelism: table top face/ mounting face mm TIR 0.080 0.040 0.025 0.015
   parallelism: base tenon/ table top tenon mm 100 mm TIR 0.020 0.006 0.004 0.004

7. Face gear, number of teeth/divisions
   Standard number of teeth 120 max. 360
   divisions obtainable 1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120
   Required division “…” to be completed when ordering

8. Operating data
   pressure medium hydraulic oil
   working pressure bar 30
   oil consumption per cycle l 1.23 (T 4)
   table lift mm approx. 4
   shipping weight (table dia. 630 mm) kg approx. 510 0.800 kg approx. 610

9. Indexing time
   (at working pressure 30 bar)
   Index
   mass moment of inertia (max.) kgm² 100
   indexing time (unclamp, rotate, clamp) s 4.3 3.8 3.4 3.0 2.8
   indexing frequency min⁻¹ 10 12 14 16 18
   mass moment of inertia (½ max.) kgm² 65
   indexing time (unclamp, rotate, clamp) s 3.7 3.2 2.8 2.8 2.4
   indexing frequency min⁻¹ 11 13 16 18 20
10. Loading data (at working pressure 30 bar)

**Machining forces – against clamped table top:**
- Machining thrust perpendicular to table top within 630 mm N 40,000
- Tangential moment Nm 30,000
- Tilting moment Nm 20,000

**Table loads – carried on horizontal table top:**
- Load, carried within 630 mm dia. kg 1,500
- Mass moment of inertia of table load kgm² 100
- Moment of eccentric load Nm 1,500

**Table loads – carried on vertical table top:**
- Load, carried within 630 mm dia. kg 450
- Torque of table load Nm 790
- Moment of eccentric load Nm 800
- Table load with tailstock kg 1,500

11. Dimensions

- F-stop*
- U-rotary selector knob*
- Indexing speed throttle*
- Damping throttle*
- *for anti-clockwise rotation inverse to the centre axis

Technical data 11.13.6.
### Technical data

#### 1. Type designation

**FIBROTAKT** “indexing with lifting table top”

**Type** Standard, Hydraulic Indexing Table, with external control

**Size**

<table>
<thead>
<tr>
<th>working position</th>
</tr>
</thead>
<tbody>
<tr>
<td>any</td>
</tr>
</tbody>
</table>

#### 2. Table top dimensions

<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radial</td>
<td>800 mm</td>
</tr>
<tr>
<td>Radial</td>
<td>1000 mm</td>
</tr>
</tbody>
</table>

#### 3. Table clamping

**hydraulic**

#### 4. Rack + pinion drive

**max. index angle**

<table>
<thead>
<tr>
<th>rotation direction</th>
<th>available for</th>
</tr>
</thead>
<tbody>
<tr>
<td>clockwise</td>
<td>F, U</td>
</tr>
<tr>
<td>anti-clockwise</td>
<td>F, U</td>
</tr>
<tr>
<td>clockwise and anti-clockwise, multiple pendulum only</td>
<td>F</td>
</tr>
</tbody>
</table>

#### 5. Change of index (see page 9)

| fixed division “F” | variable division “U” | max. 11 divisions |

#### 6. Accuracy

(at pressure/diameter: 30 bar/800 mm)

<table>
<thead>
<tr>
<th>Class</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>indexing accuracy seconds</td>
<td>≤5 s</td>
<td>≤12 s</td>
<td>≤6 s</td>
<td>≤3 s</td>
</tr>
<tr>
<td>repeatability as percentage of indexing accuracy</td>
<td>≤0,024 %</td>
<td>≤0,012 %</td>
<td>≤0,006 %</td>
<td>≤0,003 %</td>
</tr>
<tr>
<td>runout of table top centre bore</td>
<td>mm TIR 0,040</td>
<td>0,018</td>
<td>0,010</td>
<td>0,005</td>
</tr>
<tr>
<td>max. wobble of table top</td>
<td>mm TIR 0,060</td>
<td>0,030</td>
<td>0,020</td>
<td>0,010</td>
</tr>
<tr>
<td>parallelism: table top face/ mounting face</td>
<td>mm TIR 0,080</td>
<td>0,050</td>
<td>0,030</td>
<td>0,018</td>
</tr>
<tr>
<td>parallelism: base tenon/ table top tenon</td>
<td>mm TIR 0,020</td>
<td>0,006</td>
<td>0,004</td>
<td>0,004</td>
</tr>
</tbody>
</table>

#### 7. Face gear, number of teeth/divisions

<table>
<thead>
<tr>
<th>Standard number of teeth</th>
<th>144</th>
<th>max. 360</th>
</tr>
</thead>
<tbody>
<tr>
<td>divisions obtainable</td>
<td>2, 3, 4, 6, 8, 9, 12, 16, 18, 24, 36, 48, 72, 144</td>
<td></td>
</tr>
<tr>
<td>Required division “T…” to be completed when ordering</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 8. Operating data

<table>
<thead>
<tr>
<th>pressure medium</th>
<th>hydraulic oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>working pressure</td>
<td>bar 30</td>
</tr>
<tr>
<td>oil consumption per cycle</td>
<td>l 2,65 (T4)</td>
</tr>
<tr>
<td>table lift</td>
<td>mm approx. 4</td>
</tr>
<tr>
<td>shipping weight (table dia. 800 mm)</td>
<td>kg approx. 950</td>
</tr>
<tr>
<td>kg approx. 1000</td>
<td>kg approx. 1170</td>
</tr>
</tbody>
</table>

#### 9. Indexing time

(at working pressure 30 bar)

<table>
<thead>
<tr>
<th>Index</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>6</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>mass moment of inertia (max.)</td>
<td>kgm²</td>
<td>350</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>indexing time (unclamp, rotate, clamp)</td>
<td>s</td>
<td>4,6</td>
<td>3,9</td>
<td>3,6</td>
<td>3,2</td>
<td>3,0</td>
</tr>
<tr>
<td>indexing frequency</td>
<td>min⁻¹</td>
<td>9</td>
<td>11</td>
<td>12</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>mass moment of inertia (7/3max.)</td>
<td>kgm²</td>
<td>230</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>indexing time (unclamp, rotate, clamp)</td>
<td>s</td>
<td>4,3</td>
<td>3,6</td>
<td>3,3</td>
<td>3,0</td>
<td>2,7</td>
</tr>
<tr>
<td>indexing frequency</td>
<td>min⁻¹</td>
<td>9</td>
<td>11</td>
<td>13</td>
<td>15</td>
<td>17</td>
</tr>
</tbody>
</table>
10. Loading data (at working pressure 30 bar)

**Machining forces – against clamped table top:**
- machining thrust perpendicular to table top within 800 mm: \(60,000\) N
- tangential moment: \(56,000\) Nm
- tilting moment: \(33,000\) Nm

**Table loads – carried on horizontal table top:**
- load, carried within 800 mm dia.: \(2,400\) kg
- mass moment of inertia of table load: \(350\) kgm²
- moment of eccentric load: \(2,500\) Nm

**Table loads – carried on vertical table top:**
- load, carried within 800 mm dia.: \(1,000\) kg
- mass moment of inertia of table load: \(350\) kgm²
- torque of table load: \(2,750\) Nm
- moment of eccentric load: \(1,800\) Nm
- table load with tailstock: \(2,400\) kg

11. Dimensions

---

**Technical data**

---

**Right of alterations reserved**
11.13.8. Technical data

1. Type designation
   - Type designation: "indexing with lifting table top"
   - Standard, Hydraulic Indexing Table, with external control

2. Table top dimensions
   - Table top execution: Table top dimension
     - Round without tee-slots: 1000 mm / 250 mm
     - Round with tee-slots: 13 Radial / 17 radial
     - To customer’s drawing

3. Table clamping
   - Standard, Hydraulic Indexing Table, with external control
   - Indexing with lifting table top

4. Rack + pinion drive
   - Max. index angle: Up to 180° (from 12), up to 120° (from 13), up to 90° (from 14)
   - Rotation direction:
     - Standard: clockwise
     - Anti-clockwise
     - Clockwise and anti-clockwise, multiple

5. Change of index (see page 9)
   - Fixed division "F" 11
   - Variable division "U" 21
   - Max. 11 divisions

6. Accuracy
   - (at pressure/diameter: 50 bar/1000 mm)
     - Class: 4 3 2 1
     - Indexing accuracy seconds:
       - ± 0.1, ± 0.6, ± 3, ± 1.5
     - Repeatability as percentage of indexing accuracy:
       - ± 0.03, ± 0.015, ± 0.008, ± 0.004
     - Runout of table top:
       - Centre bore:
         - MM: ± 0.040, ± 0.018, ± 0.010, ± 0.005
       - Max. wobble of table top:
         - MM: ± 0.070, ± 0.035, ± 0.025, ± 0.015
     - Parallelism: table top face/mounting face:
       - mm: ± 0.090, ± 0.050, ± 0.040, ± 0.025
     - Parallelism: base tenon/table top tenon:
       - ± 0.020, ± 0.006, ± 0.004, ± 0.004

7. Face gear, number of teeth/divisions
   - Standard number of teeth: 144
   - Max. 360
   - Divisions obtainable: T 2, 3, 4, 5, 6, 8, 9, 12, 16, 18, 24, 36, 48, 72, 144
   - Required division "T..." to be completed when ordering

8. Operating data
   - Pressure medium: Hydraulic oil
   - Working pressure: 50 bar
   - Oil consumption per cycle: 3.30 (T4)
   - Table lift: mm approx. 4
   - Shipping weight (table dia. 1000 mm):
     - Kg approx. 1690
     - Kg approx. 2075

9. Indexing time
   - (at working pressure 50 bar)
     - Index:
       - Indexing time (unclamp, rotate, clamp):
         - s: 4.3, 3.6, 3.2, 2.9, 2.7
     - Indexing frequency:
       - min⁻¹: 9, 11, 13, 15, 17
     - Mass moment of inertia (max.):
       - Kg m⁻²: 750
     - Mass moment of inertia (/% max.):
       - Kg m⁻²: 500
     - Indexing frequency:
       - Indexing time (unclamp, rotate, clamp):
         - s: 4.2, 3.5, 3.1, 2.8, 2.5
     - Indexing frequency:
       - Indexing time (unclamp, rotate, clamp):
         - min⁻¹: 9, 11, 13, 16, 18

Example of ordering code number: 11.13.8. Block 1 2 3 4 5 6 7 8
10. Loading data (at working pressure 50 bar)

Machining forces – against clamped table top:
- Machining thrust perpendicular to table top within 1000 mm: N 120,000
- Tilting moment: Nm 70,000

Table loads – carried on horizontal table top:
- Load, carried within 1000 mm dia.: kg 3,800
- Mass moment of inertia of table load: kgm² 750
- Moment of eccentric load: Nm 3,800

Table loads – carried on vertical table top:
- Load, carried within 1000 mm dia.: kg 1,500
- Mass moment of inertia of table load: kgm² 1,900
- Torque of table load: Nm 2,750
- Moment of eccentric load: Nm 3,800
- Table load with tailstock: kg 3,800

11. Dimensions

Technical data 11.13.8.

*M for anti-clockwise rotation inverse to the centre axis

H 8 with accuracy class 4
H 7 with accuracy class 3
H 6 with accuracy class 2 and 1
G 1/2 No 1–4
hydraulic entries

indexing speed throttle*

H 8 with accuracy class 4
H 7 with accuracy class 3
H 6 with accuracy class 2 and 1
G 1/2 No 1–4
hydraulic entries

indexing speed throttle*

* for anti-clockwise rotation inverse to the centre axis

G 1/2 Connection for ventilation or connection for air purge (G 1/2)

plug-in connection for limit switches

Right of alterations reserved
### 11.16.3. Technical data

#### 1. Type designation

<table>
<thead>
<tr>
<th>Type designation</th>
<th>“indexing with lifting table top”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Standard, Indexing Table with electric motor worm drive</td>
</tr>
<tr>
<td>Size</td>
<td>3</td>
</tr>
<tr>
<td>working position</td>
<td>any</td>
</tr>
</tbody>
</table>

#### 2. Table top dimensions

<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>round</td>
<td>300 mm</td>
</tr>
<tr>
<td>without tee-slots</td>
<td></td>
</tr>
<tr>
<td>round</td>
<td>13 Radial</td>
</tr>
<tr>
<td>with Tee-slots</td>
<td></td>
</tr>
<tr>
<td>to customer’s drawing</td>
<td></td>
</tr>
</tbody>
</table>

#### 3. Table clamping

- hydraulic

#### 4. Worm drive

- Encoder on motor shaft
- Motor SIEMENS 1FT6 064 xAF71-xEGx

#### 5. Positioning

Any position dependent on the number of teeth in the face gears fitted

#### 6. Accuracy

<table>
<thead>
<tr>
<th>Class</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>indexing accuracy seconds</td>
<td>≤1,0</td>
<td>1,5</td>
<td>3,0</td>
<td>6,0</td>
</tr>
<tr>
<td>repeatability as percentage of indexing accuracy</td>
<td>≤3</td>
<td>0,05</td>
<td>0,10</td>
<td>0,12</td>
</tr>
<tr>
<td>runout of table top centre bore</td>
<td>0,040</td>
<td>0,018</td>
<td>0,010</td>
<td>0,005</td>
</tr>
<tr>
<td>max. wobble of table top</td>
<td>0,035</td>
<td>0,020</td>
<td>0,008</td>
<td>0,005</td>
</tr>
<tr>
<td>parallelism: table top face/ mounting face</td>
<td>0,045</td>
<td>0,025</td>
<td>0,012</td>
<td>0,008</td>
</tr>
<tr>
<td>rectangularity of table top face to mounting face</td>
<td>0,045</td>
<td>0,025</td>
<td>0,012</td>
<td>0,008</td>
</tr>
<tr>
<td>parallelism: base tenon/ table top tenon</td>
<td>0,020</td>
<td>0,006</td>
<td>0,004</td>
<td>0,004</td>
</tr>
</tbody>
</table>

#### 7. Face gear, number of teeth/divisions

| standard number of teeth | 96 |
| max. | 720 |

#### 8. Operating data

| Table top speed | rpm | 41.7 |
| pressure medium | hyd. oil |
| working pressure | bar | 63 |
| volume for clamping and unclamping | l | 0.048 |
| volumetric flow rate required | l/min | 18 |
| table lift | mm approx. | 4 |
| worm drive ratio | i | 72 |
| ratio | i | 72 |
| motor torque required | Nm | 10 |
| max. motor speed | rpm | 3000 |
| shipping weight (table dia. 320 mm) | kg approx. | 90 |

#### 9. Indexing time

<table>
<thead>
<tr>
<th>standard (n= 41.7 rpm, hour = 72) (special versions for higher mass moments of inertia or for shorter indexing times, e.g. with planetary gear unit, available on request)</th>
</tr>
</thead>
<tbody>
<tr>
<td>index</td>
</tr>
<tr>
<td>mass moment of inertia payload</td>
</tr>
<tr>
<td>indexing time (unclamp, rotate, clamp)</td>
</tr>
<tr>
<td>indexing time includes: idle period of hydraulic system – locking and unlocking</td>
</tr>
<tr>
<td>cycle time of control system (customer) and controlling time of servo drive</td>
</tr>
</tbody>
</table>
Technical data 11.16.3.

10. Loading data (at working pressure 63 bar)

Machining forces – against clamped table top:
- machining thrust perpendicular to table top within 320 mm N 20000
- tangential moment Nm 5200
- tilting moment Nm 3900

Table loads – carried on horizontal table top:
- load, carried within 320 mm dia. kg 500
- mass moment of inertia of table load kgm² 20
- moment of eccentric load Nm 600

Table loads – carried on vertical table top:
- load, carried within 320 mm dia. kg 200
- mass moment of inertia of table load kgm² 20
- torque or table load Nm 335
- moment of eccentric load Nm 100
- table load with tailstock kg 500

11. Dimensions

- Ø40
- 535
- G1/4 Oil filling port
- Stroke 4
- G1/4 Oil level gauge
- G1/2 Oil drain screw
- M25x1,5 Central electrical connection
- G1/4 Air purge (G1/2 Air supply pipe)
- G1/4 Nr. 1 + 2 hydraulic entries
- H 8 with accuracy class 4
- H 7 with accuracy class 3
- H 6 with accuracy class 2 and 1
- Limit switch S1 + S3
- tenon slot as required state position 1, 2, 3

Right of alterations reserved
11.16.4. Technical data

1. Type designation
   FIBROTAKT—“indexing with lifting table top”
   Type Standard, Indexing Table with electric motor worm drive
   Size 4
   working position any

2. Table top dimensions
   Table top execution Table top dimension
   • round without tee-slots 400 mm
   • round with tee-slots
   to customer’s drawing

3. Table clamping
   hydraulic

4. Worm drive
   Encoder on motor shaft
   Motor SIEMENS 1FT6 064 6AH7x-xEGx
   other drive units available on request

5. Positioning
   Any position dependent on the number of teeth in the face gears fitted

6. Accuracy
   (at pressure/diameter: 30 bar/400 mm)
   Class
   indexing accuracy seconds
   ≤s ±12 ±6 ±3 ±1,5
   repeatability as percentage
   of indexing accuracy
   % 30 25 20 20
   runout of table top
   centre bore mm 0,040 0,018 0,010 0,005
   max. wobble of table top mm 0,035 0,020 0,008 0,005
   parallelism: table top face
   mounting face mm 0,050 0,025 0,012 0,008
   rectangularity of table top face
to mounting face mm 0,050 0,025 0,012 0,008
   parallelism: base tenon
   table top tenon mm 100 mm 0,020 0,006 0,004 0,004

7. Face gear, number of teeth/divisions
   standard number of teeth 360 max. 720

8. Operating data
   table top speed rpm 32,1
   pressure medium hyd. oil
   working pressure bar 30
   volume for clamping and unclamping l 0,116
   volumetric flow rate required l/min 34,9
   table lift mm approx. 4
   worm drive ratio i 20
   planetary gear system i 7
   ratio
   motor torque required Nm 13,9
   max. motor speed rpm 4500
   shipping weight (table dia. 400 mm) Kg approx. 180

9. Indexing time
   standard (n= 32,1 rpm, kore = 140) (special versions for higher mass moments of inertia or for shorter indexing times, e.g. with planetary gear unit, available on request)
   index
   mass moment of inertia payload kgm²
   indexing time (unclamp, rotate, clamp) s 1,0 1,1 1,2 1,4 1,8
   * indexing time includes: idle period of hydraulic system – locking and unlocking
   cycle time of control system (customer) and controlling time of servo drive 0,20 s

Example of ordering code number 11.16.4.71.42
10. Loading data (at working pressure 30 bar)

### Machining forces – against clamped table top:
- Machining thrust perpendicular to table top within 400 mm: N 30,000
- Tangential moment: Nm 12,000
- Tilting moment: Nm 7,000

### Table loads – carried on horizontal table top:
- Load, carried within 400 mm dia.: kg 750
- Mass moment of inertia of table load: kgm² 45
- Moment of eccentric load: Nm 1000

### Table loads – carried on vertical table top:
- Load, carried within 400 mm dia.: kg 300
- Torque of table load: Nm 800
- Moment of eccentric load: Nm 390

Table loads with tailstock:
- Kg 750
- Mass moment of inertia of table load: kgm² 45
- Moment of eccentric load: Nm 1000

11. Dimensions

- G½ Connection for ventilation or connection for air purge (G ½)
- M25x1.5
- Cable outlet

Right of alterations reserved
11.16.5. Technical data

1. Type designation
   - Type: Standard, Indexing Table with electric motor worm drive
   - Size: 5

2. Table top dimensions
   - Table top execution: 500 mm, 630 mm
   - Round without tee-slots: 11, 15
   - Round with tee-slots: 13, 17
   - To customer's drawing: 10

3. Table clamping
   - Hydraulic

4. Worm drive
   - Encoder on motor shaft
   - Motor: Siemens 1FT6 064 6AH7x-xEGx
   - Other drive units available on request

5. Positioning
   - Any position dependent on the number of teeth in the face gears fitted

6. Accuracy
   - Class: 4, 3, 2, 1
   - Indexing accuracy seconds: ±4, ±3, ±2, ±1
   - Indexing accuracy: ±0.015, ±0.008, ±0.004, ±0.002
   - Repeatability as percentage of indexing accuracy: 30, 25, 20, 20
   - Runout of table top: ±0.040, ±0.018, ±0.010, ±0.005
   - Max. wobble of table top: ±0.050, ±0.025, ±0.015, ±0.008
   - Parallelism: Table top face/mounting face: ±0.050, ±0.040, ±0.025, ±0.010
   - Parallelism: Base tenon/table top tenon: ±0.020, ±0.006, ±0.004, ±0.004

7. Face gear, number of teeth/divisions
   - Standard number of teeth: 360, max. 720

8. Operating data
   - Table top speed: rpm, 25
   - Pressure medium: Hydr. Oil
   - Working pressure: Bar, 30
   - Volume for clamping and unclamping: l, 0.144
   - Volumetric flow rate required: l/min, 43
   - Worm drive: ±4
   - Planetary gear system: ±8
   - Ratio: 180
   - Motor torque required: Nm, 12.6
   - Max. motor speed: rpm, 4500
   - Shipping weight (dia. 500 mm): Kg, approx. 325

9. Indexing time
   - Standard (n=25.0 rpm), total = 180 (special versions for higher mass moments of inertia or for shorter indexing times, e.g. with planetary gear unit, available on request)
   - Indexing time: 1, 2, 3, 4, 5, 6, 7

Example of ordering code number: 11.16.5.117142
10. Loading data (at working pressure 30 bar)

Machining forces – against clamped table top:
- Machining thrust perpendicular to table top within 500 mm N 35,000
- Tangential moment Nm 17,500
- Tilting moment Nm 10,400

Table loads – carried on horizontal table top:
- Load, carried within 500 mm dia. kg 1,000
- Mass moment of inertia of table load kgm² 100
- Moment of eccentric load Nm 1,200

Table loads – carried on vertical table top:
- Load, carried within 500 mm dia. kg 400
- Torque of table load Nm 660
- Moment of eccentric load Nm 740
- Table load with tailstock kg 1,000

11. Dimensions

- H 8 with accuracy class 4
- H 7 with accuracy class 3
- H 6 with accuracy class 2 and 1
- G ½ No 1+2 hydraulic entries

Right of alterations reserved
## Technical data

### 1. Type designation

<table>
<thead>
<tr>
<th>Type designation</th>
<th>“indexing with lifting table top”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Standard, Indexing Table with electric motor worm drive</td>
</tr>
<tr>
<td>Size</td>
<td>6</td>
</tr>
<tr>
<td>working position</td>
<td>any</td>
</tr>
</tbody>
</table>

### 2. Table top dimensions

<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>round</td>
<td>630 mm</td>
</tr>
<tr>
<td>without tee-slots</td>
<td>800 mm</td>
</tr>
<tr>
<td>round</td>
<td>11</td>
</tr>
<tr>
<td>with tee-slots</td>
<td>13</td>
</tr>
<tr>
<td>radial</td>
<td>15</td>
</tr>
<tr>
<td>radial</td>
<td>17</td>
</tr>
<tr>
<td>to customer’s drawing</td>
<td>00</td>
</tr>
</tbody>
</table>

### 3. Table clamping

<table>
<thead>
<tr>
<th>hydraulic</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
</tr>
</tbody>
</table>

### 4. Worm drive

<table>
<thead>
<tr>
<th>Encoder</th>
<th>on motor shaft</th>
</tr>
</thead>
<tbody>
<tr>
<td>motor</td>
<td>SIEMENS 1F15 085 xAF7x–xEGx</td>
</tr>
<tr>
<td>other drive units available on request</td>
<td></td>
</tr>
</tbody>
</table>

### 5. Positioning

Any position dependent on the number of teeth in the face gears fitted

### 6. Accuracy

(at pressure/diameter: 30 bar/630 mm)

<table>
<thead>
<tr>
<th>Class</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>indexing accuracy seconds</td>
<td>±1 12</td>
<td>±1 6</td>
<td>±1 3</td>
<td>±1 1,5</td>
</tr>
<tr>
<td>radians at dia. 630 mm</td>
<td>±0,02</td>
<td>±0,01</td>
<td>±0,005</td>
<td>±0,0025</td>
</tr>
<tr>
<td>repeatability as percentage of indexing accuracy</td>
<td>%</td>
<td>30</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>runout of table top centre bore</td>
<td>mm TIR</td>
<td>0,040</td>
<td>0,018</td>
<td>0,010</td>
</tr>
<tr>
<td>max. wobble of table top</td>
<td>mm TIR</td>
<td>0,050</td>
<td>0,025</td>
<td>0,015</td>
</tr>
<tr>
<td>parallelism: table top face/mounting face</td>
<td>mm TIR</td>
<td>0,080</td>
<td>0,040</td>
<td>0,025</td>
</tr>
<tr>
<td>parallelism: base tenon/table top tenon</td>
<td>mm TIR</td>
<td>0,020</td>
<td>0,006</td>
<td>0,004</td>
</tr>
</tbody>
</table>

### 7. Face gear, number of teeth/divisions

| standard number of teeth | 360 | max. 1440 |

### 8. Operating data

<table>
<thead>
<tr>
<th>table top speed</th>
<th>rpm</th>
<th>21,4</th>
</tr>
</thead>
<tbody>
<tr>
<td>pressure medium</td>
<td>hyd. oil</td>
<td></td>
</tr>
<tr>
<td>working pressure</td>
<td>bar</td>
<td>30</td>
</tr>
<tr>
<td>volume for clamping and unclamping</td>
<td>l</td>
<td>0,22</td>
</tr>
<tr>
<td>volumetric flow rate required</td>
<td>l/min</td>
<td>66,4</td>
</tr>
<tr>
<td>table tilt</td>
<td>mm approx.</td>
<td>4</td>
</tr>
<tr>
<td>worm drive</td>
<td>i</td>
<td>20</td>
</tr>
<tr>
<td>planetary gear system</td>
<td>i</td>
<td>7</td>
</tr>
<tr>
<td>ratio</td>
<td>i</td>
<td>140</td>
</tr>
<tr>
<td>motor torque required</td>
<td>Nm</td>
<td>39,1</td>
</tr>
<tr>
<td>max. motor speed</td>
<td>rpm</td>
<td>3000</td>
</tr>
<tr>
<td>shipping weight (table dia. 630 mm)</td>
<td>kg approx.</td>
<td>510</td>
</tr>
</tbody>
</table>

### 9. Indexing time

| standard (n=24,1 rpm, total = 140 (special versions for higher mass moments of inertia or for shorter indexing times, e.g. with planetary gear unit, available on request) |
|---|---|---|---|---|---|
| division | 1 | 12 | 6 | 4 | 2 |
| mass moment of inertia payload | kgm² | 250 |
| indexing time | s | 1,4 | 1,4 | 1,5 | 1,7 | 2,3 |
| *indexing time includes: idle period of hydraulic system – locking and unlocking | 0,50 s |
| cycle time of control system (customer) and controlling time of servo drive | 0,20 s |

Example of ordering code number: 11.16.6
10. Loading data (at working pressure 30 bar)

Machining forces – against clamped table top:
- Machining thrust perpendicular to table top within 630 mm N 40,000
- Tangential momentNm 33,000
- Tilting momentNm 20,500

Table loads – carried on horizontal table top:
- Load, carried within 630 mm dia. kg 1500
- Mass moment of inertia of table load kgm² 250
- Moment of eccentric load Nm 1500

Table loads – carried on vertical table top:
- Load, carried within 630 mm dia. kg 450
- Torque of table load Nm 790
- Moment of eccentric load Nm 800
- Table load with tailstock kg 1500

11. Dimensions

Motor arrangement with right angle gear on request (3 × 90°)

Air purge/ventilation pipe connection

Hydraulic entries
11.16.7. Technical data

1. Type designation
   Type designation: "indexing with lifting table top"
   FIBROTAKT 11.16.7
   Type: Standard, Indexing Table with electric motor worm drive
   Size: 7
   Working position: any

2. Table top dimensions
   Table top execution: 800 mm, 1000 mm
   • Round without tee-slots: 11
   • Round with tee-slots: 13
   To customer's drawing: 00

3. Table clamping
   Table clamping: hydraulic

4. Worm drive
   Encoder on motor shaft
   Motor: SIEMENS 1FT6 086 XAH7-xxEGx
   Other drive units available on request

5. Positioning
   Any position dependent on the number of teeth in the face gears fitted

6. Accuracy
   (at pressure/diameter: 30 bar/800 mm)
   Class
   Indexing accuracy seconds: ≤ 4, ≤ 3, ≤ 2, ≤ 1
   Radiants at dia. 800 mm: ± 0,024, ± 0,012, ± 0,006, ± 0,003
   Repeatability as percentage of indexing accuracy: % 30, % 25, % 20
   Runout of table top: 0,040, 0,018, 0,010, 0,005
   Max. wobble of table top: 0,060, 0,030, 0,020, 0,010
   Parallelism: table top face/mounting face: 0,080, 0,050, 0,030, 0,018
   Parallelism: base tenon/table top tenon: 100 mm TIR 0,020, 0,006, 0,004, 0,004

7. Face gear, number of teeth/divisions
   Standard number of teeth: 360, Max. 1440

8. Operating data
   Table top speed: 22,5 rpm
   Pressure medium: Hydr. oil
   Working pressure: 30 bar
   Volume for clamping and unclamping: 0,28 l
   Volumetric flow rate required: 56,3 l/min
   Table lift: Approx. 4 mm
   Worm drive ratio: 1/20
   Planetary gear system ratio: 1/10
   Motor torque required: 31,1 Nm
   Max. motor speed: 4500 rpm
   Shipping weight (table dia. 800 mm): Approx. 950 kg

9. Indexing time
   Standard (n=22,5 rpm, tcycle = 200) (special versions for higher mass moments of inertia or for shorter indexing times, e.g. with planetary gear unit, available on request)
   Division
   Mass moment of inertia payload: Kg m²
   Indexing time: 1,5, 1,7, 1,9, 2,1, 2,3
   *Indexing time includes: idle period of hydraulic system - locking and unlocking 0,5 s
   Cycle time of control system (customer) and controlling time of servo drive 0,20 s

Example of ordering code number

Right of alterations reserved
10. Loading data (at working pressure 30 bar)

<table>
<thead>
<tr>
<th>Machining forces – against clamped table top:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>machining thrust perpendicular to table top within 800 mm</td>
<td>60,000</td>
</tr>
<tr>
<td>tangential moment</td>
<td>56,000</td>
</tr>
<tr>
<td>tilting moment</td>
<td>33,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table loads – carried on horizontal table top:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>load, carried within 800 mm dia.</td>
<td>2,400</td>
</tr>
<tr>
<td>mass moment of inertia of table load</td>
<td>700</td>
</tr>
<tr>
<td>moment of eccentric load</td>
<td>2,500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table loads – carried on vertical table top:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>load, carried within 800 mm dia.</td>
<td>1,000</td>
</tr>
<tr>
<td>mass moment of inertia of table load</td>
<td>700</td>
</tr>
<tr>
<td>torque of table load</td>
<td>2,750</td>
</tr>
<tr>
<td>moment of eccentric load</td>
<td>1,800</td>
</tr>
<tr>
<td>table load with tailstock</td>
<td>2,400</td>
</tr>
</tbody>
</table>

11. Dimensions

- H 8 with accuracy class 4
- H 7 with accuracy class 3
- H 6 with accuracy class 2 and 1

- G 3⁄4 No 1+2
- hydraulic entries

- Air purge/ventilation pipe connection
- Motor arrangement with right angle gear on request (3 × 90°)
- hyd. entries
- inspection plate
- oil sight glass
- plug-in connection for limit switches
- oil drain screw
- oil filler screw

Right of alterations reserved
### 11.16.8. Technical data

#### 1. Type designation
| Type designation | FIBROTAKT “indexing with lifting table top” |

#### 2. Table top dimensions

<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round</td>
<td>1000 mm</td>
</tr>
<tr>
<td></td>
<td>1250 mm</td>
</tr>
<tr>
<td>Round</td>
<td>13 Radial</td>
</tr>
<tr>
<td></td>
<td>15 Radial</td>
</tr>
<tr>
<td>to customer’s drawing</td>
<td>16</td>
</tr>
</tbody>
</table>

#### 3. Table clamping

<table>
<thead>
<tr>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>hydraulic</td>
</tr>
</tbody>
</table>

#### 4. Worm drive

- Encoder: on motor shaft
- Motor: Siemens 1FT6 086 xAH7–xEGx
- Other drive units available on request

#### 5. Positioning

Any position dependent on the number of teeth in the face gears fitted

#### 6. Accuracy

<table>
<thead>
<tr>
<th>Class</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>±1,5</td>
<td>±0,004</td>
<td>±0,015</td>
<td>±0,008</td>
</tr>
<tr>
<td></td>
<td>±0,015</td>
<td>±6</td>
<td>±12</td>
<td>±3</td>
</tr>
<tr>
<td></td>
<td>0,004</td>
<td>±0,03</td>
<td>±0,003</td>
<td>±1</td>
</tr>
</tbody>
</table>

#### 7. Face gear, number of teeth/divisions

| Standard number of teeth | 360 | max. 1440 |

#### 8. Operating data

<table>
<thead>
<tr>
<th></th>
<th>rpm</th>
<th>14,1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table top speed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure medium</td>
<td>bar</td>
<td>50</td>
</tr>
<tr>
<td>Working pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume for clamping and unclamping</td>
<td>l</td>
<td>0,30</td>
</tr>
<tr>
<td>Volumetric flow rate required</td>
<td>l/min</td>
<td>60,7</td>
</tr>
<tr>
<td>Table lift</td>
<td>mm approx.</td>
<td>4</td>
</tr>
<tr>
<td>Worm drive</td>
<td>rpm</td>
<td>20</td>
</tr>
<tr>
<td>Planetary gear system</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Ratio</td>
<td></td>
<td>120</td>
</tr>
<tr>
<td>Motor torque required</td>
<td>Nm</td>
<td>35,7</td>
</tr>
<tr>
<td>Max. motor speed</td>
<td>rpm</td>
<td>4500</td>
</tr>
<tr>
<td>Shipping weight (table dia. 1000 mm)</td>
<td>kg approx.</td>
<td>1690</td>
</tr>
</tbody>
</table>

#### 9. Indexing time

<table>
<thead>
<tr>
<th>Division</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass moment of inertia (payload)</td>
<td>kgm²</td>
<td>1500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indexing time (unclamp, rotate, clamp) s</td>
<td>1,7</td>
<td>1,9</td>
<td>2,0</td>
<td>2,4</td>
<td>4,5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indexing time includes: idle period of hydraulic system – locking and unlocking</td>
<td>0,50 s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cycle time of control system (customer) and controlling time of servo drive</td>
<td>0,20 s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Example of ordering code number: 11, 16, 8
10. Loading data (at working pressure 50 bar)

**Machining forces – against clamped table top:**
- Machining thrust perpendicular to table top within 1000 mm: N 120,000
- Tangential moment: Nm 70,000
- Tilting moment: Nm 60,000

**Table loads – carried on horizontal table top:**
- Load, carried within 1000 mm dia.: kg 3.800
- Mass moment of inertia of table load: kgm² 1.500
- Moment of eccentric load: Nm 3.600

**Table loads – carried on vertical table top:**
- Load, carried within 1000 mm dia.: kg 1.500
- Torque of table load: Nm 2.750
- Moment of eccentric load: Nm 2.800

11. Dimensions

- H 8 with accuracy class 4
- H 7 with accuracy class 3
- H 6 with accuracy class 2 and 1

**G1/2 No 1+2 hydraulic entries**
- Oil filler screw
- Oil drain screw
- Inspection plate
- Oil sight glass

**Right of alterations reserved**
10.16.7. Technical data

1. Type designation
   “indexing with non-lifting table top”
   Type: Standard, Indexing Table with electric motor worm drive
   Size: 7
   working position: table top horizontal, indexing table axis vertical

2. Table top dimensions
   Table top execution: 800 mm
   Table top dimension:
   - round without tee-slots: 11
   - round with tee-slots: 13
   - radial
   - radial
   to customer’s drawing

3. Table clamping
   Hydraulic

4. Worm drive
   Encoder on motor shaft
   Motor: SIEMENS 1FT6 086 xAF71–xEGx
   Other drive units available on request

5. Positioning
   Any position dependent on the number of teeth in the face gears fitted

6. Accuracy
   (at pressure/diameter: 100 bar/800 mm)
   Class
   Indexing accuracy seconds:
   - ≤ 6 ±12
   - ≤ 6 ±8 ±5
   - ≤ 3 ±4 ±3
   - ≤ 1,5 ±2 ±1,5
   Radii at dia. 800 mm:
   ±0,024
   ±0,012
   ±0,006
   ±0,003
   Repeatability as percentage of indexing accuracy:
   - 30
   - 25
   - 20
   - 20
   Runout of table top:
   Centre bore:
   mm TIR
   0,040
   0,018
   0,010
   0,005
   Max. wobble of table top:
   mm TIR
   0,070
   0,035
   0,025
   0,015
   Parallelism: table top face/mounting face:
   mm TIR
   0,080
   0,050
   0,030
   0,018
   Parallelism: base tenon/table top tenon:
   mm
   100 mm TIR
   0,020
   0,006
   0,004
   0,004

7. Face gear, number of teeth/divisions
   Standard number of teeth:
   360
   Max. 720

8. Operating data
   Table top speed:
   rpm 23,8
   Pressure medium:
   Hydr. oil
   Working pressure:
   Bar 150
   Volume for clamping and unclamping:
   l 0,25
   Volumetric flow rate required:
   l/min 80
   Worm drive:
   i 14
   Spur gear drive:
   i 9
   Ratio:
   i 126
   Motor torque required:
   Nm 40
   Max. motor speed:
   rpm 3000
   Shipping weight (table dia. 800 mm):
   kg approx. 1700

9. Indexing time
   Standard (n=23,8 rpm, i_total = 126) (special versions for higher mass moments of inertia or for shorter indexing times, e.g. with planetary gear unit, available on request)
   Division: 1 12 8 6 4 2
   Mass moment of inertia payload:
   kgm² 400
   Indexing time:
   (unclamp, rotate, clamp):
   - 1,5
   - 1,7
   - 1,8
   - 2,1
   - 2,7
   Cycle time of control system (customer) and controlling time of servo drive:
   0,50 s
   0,20 s

Example of ordering code number:

10.16.7. Example of ordering code number

Right of alterations reserved
10. Loading data (at working pressure 100 bar)

Machining forces – against clamped table top:
- Machining thrust perpendicular to table top within 800 mm: N 60,000
- Tangential moment: Nm 40,000
- Tilting moment: Nm 30,000

Table loads – carried on horizontal table top:
- Load, carried within 800 mm dia.: kg 3,000
- Mass moment of inertia of table load: kpm² 400
- Moment of eccentric load*: Nm 300
* Higher values depending on payload

11. Dimensions

H 8 with accuracy class 4
H 7 with accuracy class 3
H 6 with accuracy class 2 and 1

G³⁄₄ Oil level gauge
G¹⁄₄ Oil filling port
G¹⁄₄ Oil drain plug
G¹⁄₄ Air purge

M25x1,5 Central electrical connection for limit switches

Right of alterations reserved
10.16.8. Technical data

1. Type designation
   FIBROTAKT “indexing with non-lifting table top”
   Type Standard, Indexing Table with electric motor worm drive
   Size 8
   working position table top horizontal, indexing table axis vertical

2. Table top dimensions
   Table top execution Table top dimension
   ○ round without tee-slots 1000 mm
   ○ round with tee-slots 1250 mm
   □ round radial
   □ round radial
   to customer’s drawing

3. Table clamping
   Hydraulic

4. Worm drive
   Encoder on motor shaft
   Motor SIEMENS 1FT6 105 8AF71–xEGx

5. Positioning
   Any position dependent on the number of teeth in the face gears fitted

6. Accuracy (at pressure/diameter: 100 bar/1000 mm)
   Class
   Indexing accuracy seconds ±4 ±3 ±2 ±1
   radians at dia. 1000 mm ±0,03 ±0,015 ±0,008 ±0,004
   repeatability as percentage of indexing accuracy % 30 25 20 20
   runout of table top centre bore mm TIR 0,040 0,018 0,010 0,005
   max. wobble of table top mm TIR 0,070 0,035 0,025 0,015
   parallelism: table top face/ mounting face mm TIR 0,090 0,050 0,040 0,025
   parallelism: base tenon/ table top tenon mm TIR 0,020 0,006 0,004 0,004

7. Face gear, number of teeth/divisions
   standard number of teeth 360
   max. 1440

8. Operating data
   Table top speed rpm 16,7
   Pressure medium hyd. oil
   Working pressure bar 100
   Volume for clamping and unclamping l 0,37
   Volumetric flow rate required l/min 119
   Worm drive i 18
   Spur gear drive i 10
   Ratio i 180
   Motor torque required Nm 51
   Max. motor speed rpm 3000
   Shipping weight (table dia. 1000 mm) kg approx. 2500

9. Indexing time
   Standard (n=16,7 rpm, total = 180) (special versions for higher mass moments of inertia or for shorter indexing times, e.g. with planetary gear unit, available on request)
   Division 1 12 8 6 4 2
   Mass moment of inertia payload kgm² 1500
   Indexing time (clamp, rotate, clamp) s 1,9 2,2 2,4 2,8 3,7
   * Indexing time includes: idle period of hydraulic system – locking and unlocking 0,50 s
   Cycle time of control system (customer) and controlling time of servo drive 0,20 s

Example of ordering code number

Right of alterations reserved
10. Loading data (at working pressure 100 bar)

Machining forces – against clamped table top:
- Machining thrust perpendicular to table top within 1000 mm: N 120,000
- Tangential moment: Nm 54,000
- Tilting moment: Nm 62,000

Table loads – carried on horizontal table top:
- Load, carried within 1000 mm dia.: kg 5,000
- Mass moment of inertia of table load: kgm² 1,500
- Moment of eccentric load*: Nm 700
  * Higher values depending on payload

11. Dimensions

Technical data 10.16.8.
10.16.9. Technical data

1. Type designation

<table>
<thead>
<tr>
<th>Type designation</th>
<th>“indexing with non-lifting table top”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Standard, Indexing Table with electric motor worm drive</td>
</tr>
<tr>
<td>Size</td>
<td>9</td>
</tr>
<tr>
<td>working position</td>
<td>table top horizontal, indexing table axis vertical</td>
</tr>
</tbody>
</table>

2. Table top dimensions

<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ round without tee-slots</td>
<td>1600 mm</td>
</tr>
<tr>
<td>☐ round with tee-slots</td>
<td>1600 mm</td>
</tr>
<tr>
<td>radial</td>
<td>17</td>
</tr>
<tr>
<td>radial</td>
<td>17</td>
</tr>
</tbody>
</table>

3. Table clamping

<table>
<thead>
<tr>
<th>hydraulic</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

4. Worm drive

<table>
<thead>
<tr>
<th>Encoder</th>
<th>on motor shaft</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SIEMENS 1FT6 102 8AH71–xEGx</td>
</tr>
</tbody>
</table>

5. Positioning

<table>
<thead>
<tr>
<th>Any position dependent on the number of teeth in the face gears fitted</th>
</tr>
</thead>
</table>

6. Accuracy

<table>
<thead>
<tr>
<th>Class</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>indexing accuracy seconds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ s</td>
<td>≤12</td>
<td>≤6</td>
<td>≤3</td>
<td>≤1.5</td>
</tr>
<tr>
<td>radians at dia. 1250 mm</td>
<td>≤0.04</td>
<td>≤0.02</td>
<td>≤0.01</td>
<td>≤0.005</td>
</tr>
<tr>
<td>repeatability as percentage of indexing accuracy %</td>
<td>30</td>
<td>25</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>runout of table top centre bore mm</td>
<td>TIR</td>
<td>0.040</td>
<td>0.018</td>
<td>0.010</td>
</tr>
<tr>
<td>max. wobble of table top mm</td>
<td>TIR</td>
<td>0.075</td>
<td>0.035</td>
<td>0.025</td>
</tr>
<tr>
<td>parallelism: table top face/mounting face mm</td>
<td>TIR</td>
<td>0.100</td>
<td>0.065</td>
<td>0.055</td>
</tr>
<tr>
<td>parallelism: base tenon/table top tenon</td>
<td>mm</td>
<td>100 mm</td>
<td>0.020</td>
<td>0.006</td>
</tr>
</tbody>
</table>

7. Face gear, number of teeth/divisions

| standard number of teeth | 360 |
| max. 1440 |

8. Operating data

| table top speed rpm | 12.5 |
| pressure medium | hyd. oil |
| working pressure bar | 100 |
| volume for clamping and unclamping l | 0.35 |
| volumetric flow rate required l/min | 115 |
| backgear | i |
| worm drive | i |
| spur gear drive | i |
| ratio | 360 |
| motor torque required Nm | 45 |
| max. motor speed rpm | 4500 |
| shipping weight (table dia. 1250 mm) kg approx. | 4000 |

9. Indexing time

<table>
<thead>
<tr>
<th>standard (n=12.5 rpm, i_total = 360) special versions for higher mass moments of inertia or for shorter indexing times, e.g. with planetary gear unit, available on request</th>
</tr>
</thead>
<tbody>
<tr>
<td>division</td>
</tr>
<tr>
<td>mass moment of inertia payload kgm²</td>
</tr>
<tr>
<td>indexing time (undeclamp, rotate, clamp) s</td>
</tr>
<tr>
<td>cycle time of control system (customer) and controlling time of servo drive</td>
</tr>
</tbody>
</table>

Example of ordering code number: 10.16.9...
Technical data 10.16.9.

10. Loading data (at working pressure 100 bar)

Machining forces – against clamped table top:
- Machining thrust perpendicular to table top within 1250 mm: N 140,000
- Tangential moment: Nm 90,000
- Tilting moment: Nm 66,000

Table loads – carried on horizontal table top:
- Load, carried within 1250 mm dia.: kg 7,000
- Mass moment of inertia of table load: kg² 3,300
- Moment of eccentric load*: Nm 900

*Higher values depending on payload

11. Dimensions

- Drive side, normal
- Oil sight glass
- Oil filler screw
- Oil drain screw
- Centre of motor
- Centre of worm
- Box for limit switch
- PG 11 Connection for electric cable

Right of alterations reserved
### 10.16.10. Technical data

#### 1. Type designation
- **FIBROTAKT** “indexing with non-lifting table top”
- **Type**: Standard, Indexing Table with electric motor worm drive
  - **Size**: 10
  - **working position**: table top horizontal, indexing table axis vertical

#### 2. Table top dimensions
<table>
<thead>
<tr>
<th>Table top execution</th>
<th>Table top dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>round</td>
<td>1600 mm</td>
</tr>
<tr>
<td>without tee-slots</td>
<td>2000 mm</td>
</tr>
<tr>
<td>round</td>
<td>13 Radial</td>
</tr>
<tr>
<td>with Tee-slots</td>
<td>17 radial</td>
</tr>
<tr>
<td>to customer’s drawing</td>
<td>2000 mm</td>
</tr>
</tbody>
</table>

#### 3. Table clamping
- **Hydraulic**: 3

#### 4. Worm drive
- Encoder: on motor shaft
- **Motor**: SIEMENS 1FT6 084 8AK71–xEGx

#### 5. Positioning
- Any position dependent on the number of teeth in the face gears fitted

#### 6. Accuracy
(at pressure/diameter: 63 bar/1600 mm)

<table>
<thead>
<tr>
<th>Class</th>
<th>&lt; 1</th>
<th>±0.12</th>
<th>±0.024</th>
<th>±0.012</th>
<th>±0.006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indexing accuracy seconds</td>
<td>s</td>
<td>radians at dia. 1600</td>
<td>mm</td>
<td>%</td>
<td>runout of table top</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>centre bore</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>mm TIR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>max. wobble of table top</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>mm TIR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>parallelism: table top face/mounting face</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>mm TIR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>parallelism: base tenon/table top tenon</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100 mm TIR</td>
</tr>
</tbody>
</table>

#### 7. Face gear, number of teeth/divisions
- **standard number of teeth**: 360
- **max. 1440**

#### 8. Operating data
- **table top speed**: rpm 12.5
- **pressure medium**: hyd. oil
- **working pressure**: bar 63
- **volume for clamping and unclamping**: l 0.85
- **volumetric flow rate required (clamping – unclamping / hydrostatic system)**: l/min 214 / 9
- **planetary gear system**: i 3
- **worm drive**: i 18.5
- **spur gear drive**: i 10
- **ratio**: i 5.55
- **motor torque required**: Nm 26
- **max. motor speed**: rpm 6000
- **shipping weight (table dia. 1600 mm)**: kg approx. 5200

#### 9. Indexing time
- **standard** (n=10.81 rpm, i_total = 360) (special versions for higher mass moments of inertia or for shorter indexing times, available on request)

<table>
<thead>
<tr>
<th>Division</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>43</td>
<td>38</td>
<td>33</td>
<td>28</td>
<td>23</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>max. mass moment of inertia payload</td>
<td>kgm²</td>
<td>6900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>indexing time</td>
<td>s</td>
<td>3.7</td>
<td>4.1</td>
<td>4.5</td>
<td>5.1</td>
<td>5.5</td>
<td></td>
</tr>
</tbody>
</table>

*Indexing time includes: idle period of hydraulic system – locking and unlocking cycle time of control system (customer) and controlling time of servo drive 1.50 s

**Example of ordering code number**: 10.16.10. [blocks 1-7]
10. Loading data (at working pressure 63 bar)

Machining forces – against clamped table top:
- Machining thrust perpendicular to table top within 1600 mm N: 160,000
- Tangential moment Nm: 200,000
- Tilting moment Nm: 160,000

Table loads – carried on horizontal table top:
- Load, carried within 1600 mm dia. kg: 20,000
- Mass moment of inertia of table load kgm²: 6,900
- Moment of eccentric load Nm: 1,500
* Higher values depending on payload

11. Dimensions

- G 3/4 No 1-2 hydraulic entries
- H 8 with accuracy class 4
- H 7 with accuracy class 3
- H 6 with accuracy class 2 and 1

- Drive side, normal
- Oil sight glass
- Oil filler screw
- Oil drain screw
- Centre of motor
- Centre of worm
- Box for limit switch
- PG 11 Connection for electric cable

Right of alterations reserved
Application example

FIBROTAKT 11.16.7
Size 7
Table top dimensions 1100 x 240 mm
with controlled oil manifold
with 8 integrated jaw chucks
# Type Ordering Sheet

FIBRO GMBH  
Bereich Rundschalttische  
Postfach 1120  
D-74183 Weinsberg

| Sender:  
| Company:  
| Name:  
| Department:  
| Telephone:  
| Street:  
| City:  
| Fax:  
| E-mail:  
| Inquiry No.:  
| FIBRO Representative  
| Name: |

1. **Type designation**  
   Code number: [□] [□] [□]  
   - Fibrotakt:  
     - [□] lifting  
     - [□] non-lifting  
   - Type of construction:  
     - [□] standard  
     - [□] special design  
     - [□] pneumatic, internal control  
     - [□] pneumatic, external control  
     - [□] hydraulic, external control  
     - [□] electric worm drive motor  
   - Size: [□]  

2. **Table top**  
   Code number: [□]  
   - Dimension: [□] mm  
   - Execution:  
     - [□] round without T-slots  
     - [□] round with T-slots  
     - [□] as per customer's drawing  

3. **Locking**  
   Code number: [□]  
   - [□] pneumatic  
   - [□] hydraulic  

4. **Rotary drive**  
   Code number: [□]  
   - [□] rack + pinion  
   - Angle of rotation:  
     - [□] up to 180° (T2)  
     - [□] up to 120° (T3)  
     - [□] up to 90° (T4)  
   - Direction of rotation:  
     - [□] CW  
     - [□] CCW  
     - [□] multiple CW and CCW  
     - [□] pendulum motion only  
     - [□] rotation starting CW  
     - [□] rotation starting CCW  
     - [□] worm  
     - [□] absolute encoder at motor
### Type Ordering Sheet

<table>
<thead>
<tr>
<th>Section</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td><strong>Index change (rack + pinion) / positioning (worm)</strong>&lt;br&gt;Code number: [Blank]&lt;br&gt;rack + pinion&lt;br&gt;worm&lt;br&gt;fixed index&lt;br&gt;adjustable index (U selector knob)&lt;br&gt;any position dependent on the number of teeth in the face gears fitted</td>
</tr>
<tr>
<td>6.</td>
<td><strong>Accuracies</strong>&lt;br&gt;Code number: [Blank]&lt;br&gt;Accuracy class: 4 3 2 1</td>
</tr>
<tr>
<td>7.</td>
<td><strong>Face gear system and divisions</strong>&lt;br&gt;Code number: [Blank] –T _______&lt;br&gt;Number of teeth: [Blank]&lt;br&gt;Divisions: standard version special design&lt;br&gt;Optional divisions: [Blank]</td>
</tr>
<tr>
<td>8.</td>
<td><strong>Operating data</strong>&lt;br&gt;at a working pressure of [Blank] bar</td>
</tr>
<tr>
<td>9.</td>
<td><strong>Indexing time</strong>&lt;br&gt;for index [Blank] at a mass moment of inertia $J \leq$ [Blank] kgm²&lt;br&gt;ts $\leq$ [Blank] s</td>
</tr>
</tbody>
</table>
Determination of the moment of inertia

Moment of inertia for solid body

\[ J = \frac{1}{2} \cdot r_a^2 \cdot m \]

or

\[ J = \frac{m \cdot D_a^2}{8} \text{ (kgm}^2) \]

\( D_a = \) diameter (m)

\( r_a = \) radius of gyration (m)

\( m = \) mass (kg)

Moment of inertia from individual weights
(approximation formula)

\[ J \approx m \cdot c \cdot r^2 \cdot 1,1 \text{ (kgm}^2) \]

\( m = \) mass of each load (kg)

\( c = \) number

\( r = \) radius of gyration (m)
Determination of the moment of inertia

1. Bodies with central axis

1.1 Solid cylinder or flat disc rotating about its own axis.

\[ J = \frac{D^2}{8} \times m \]

1.2 Hollow cylinder or flat ring rotating about its own axis

\[ J = \frac{D^2+d^2}{8} \times m \]

1.3 Solid cylinder rotating about an axis perpendicular to its central axis.

\[ J = \left( \frac{L^2}{12} + \frac{D^2}{16} \right) \times m \]

1.4 Hollow cylinder rotating about an axis perpendicular to its central axis.

\[ J = \left( \frac{L^2}{12} + \frac{D^2+d^2}{16} \right) \times m \]

1.5 Rectangular plate of any thickness rotating about one central axis.

\[ J = \frac{A^2+B^2}{12} \times m \]

1.6 Long thin rod of any cross-section rotating about one central axis

\[ J = \frac{L^2}{12} \times m \]

2. Bodies with offset axis

2.1 Solid cylinder or flat disc rotating about an external axis.

\[ J = \left( \frac{D^2}{8} + r^2 \right) \times m \]

2.2 Hollow cylinder or flat ring rotating about an external axis.

\[ J = \left( \frac{D^2+d^2}{8} + r^2 \right) \times m \]

2.3 Solid cylinder rotating about an external axis perpendicular to its own central axis.

\[ J = \left( \frac{L^2}{12} + \frac{D^2}{16} + r^2 \right) \times m \]

2.4 Hollow cylinder rotating about an external axis perpendicular to its own central axis.

\[ J = \left( \frac{L^2}{12} + \frac{D^2+d^2}{16} + r^2 \right) \times m \]

2.5 Rectangular plate of any thickness rotating about an external central axis parallel to the axis of symmetry.

\[ J = \left( \frac{A^2+B^2}{12} + r^2 \right) \times m \]

2.6 Long thin rod of any cross-section rotating about an external axis perpendicular to its own central axis.

\[ J = \left( \frac{L^2}{12} + r^2 \right) \times m \]

\[ J = \text{Moment of inertia in kgm}^2 \]

Dimensions in metres, masses in kg
Product Overview

FIBRO produces various models of rotary indexing tables, so users can be sure of finding the ideal solution for any application. Just ask for more information on our full range of rotary indexing tables.

FIBROTAKT® Flush-Mount Tables with face gear were developed for use on rotary transfer machines. The concept derives from the well-tried FIBROTAKT®-series and is based on the principle of combining indexing and locking in a non-lifting system of face gear rings. Besides many other special advantages, FIBROTAKT® Flush-Mount Tables offer the following benefits:

• housing of uninterrupted round shape.
• underslung drive train.
• great rigidity, by virtue of locking into face gear rings of largest possible diameter.
• high indexing accuracy up to ±1°
• very fast indexing times with heavy table loads.
• special designs for specific applications.

Range available in any size from ø345 mm to ø2500 mm in horizontal and vertical execution.
The well-graded range of FIBROPLAN® NC-Rotary Tables is characterised by the very extensive capabilities of the rotary table movement and angular positioning, both under full CNC-control. FIBROPLAN® NC-Rotary Tables are used on machine tools of diverse type and description, with the control of their rotational axis provided either by an additional control axis of the machine’s CNC, or by a separate CNC-unit for the rotary table itself. FIBROPLAN® Rotary Tables are the result of progressive, non-compromising design concepts, aimed at utmost versatility and operational rigidity. These attributes, together with drive – and control elements of outstanding quality, enable the user to achieve:
• unrestricted rotary positioning in freely selectable sequence and magnitude
• positioning accuracies from ±3” (direct measuring system) to ±10” (indirect measuring system)
• high precision in terms of radial and facial runout, due to selected, preloaded radial/axial combination bearings of the largest possible diameter
Range is available in any size from Ø160 mm to Ø2400 mm in horizontal and vertical execution.

Primary design considerations in addition to the achievement of excellent technical functionability were reliability and durability. Structural form, sizes and performance specifications are carefully incremented, so allowing the customer an optimum choice of equipment. The universal layout of the FIBROTOR® enables it to be used as an add-on or built-in rotary table in the horizontal or vertical attitude. Quality of workmanship and use of long-term lubricants reduce maintenance work to a minimum. High quality is also a significant feature of this series of rotary table. Range is available in any size from Ø100 to Ø1250 mm.

The FIBROPLAN® NC-Rotary Tables are designed for tasks involving rapid indexing operations with the optimized motion principle. The FIBROTOR® EM./EM.NC. series of electromechanical indexing tables is designed for tasks involving rapid indexing operations.
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