

# TSF-C

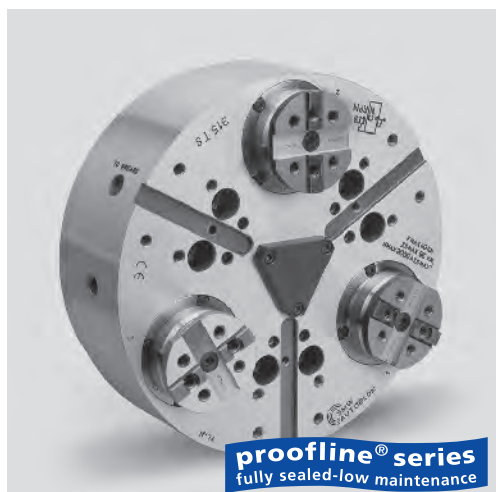
Self centering  
Floating jaws

# TSR-C

Self centering  
Rigid jaws

## High precision pull-down chucks Ø 170 - 650 mm

- active pull-down
- tongue & groove
- 3 jaws



### Application/customer benefits

- Clamping of workpieces with highest demand for **parallelism**
- **Highest productivity** with long maintenance intervals
- Constant grip force and long lifetime ensure **constant quality of work pieces**

**TSF-C:** Floating base jaws to clamp raw and easy deformed work pieces (6-point-contact)

**TSR-C:** Rigid base jaws for precise clamping on pre machined diameters

### Technical features

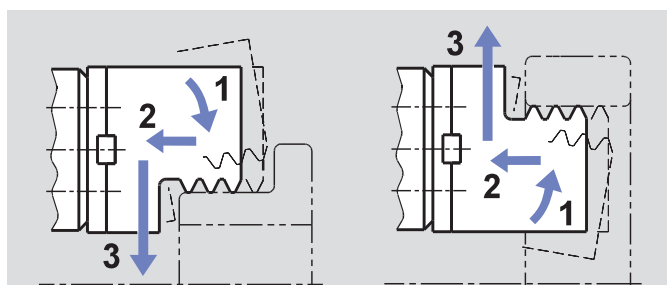
- active pull-down
- centrifugal force compensation
- tongue & groove base jaws
- central bore for coolant and/or air
- permanent grease lubrication
- **proofline® chucks** = fully sealed – low maintenance

### Standard equipment

3 jaw chuck  
mounting bolts and grease gun

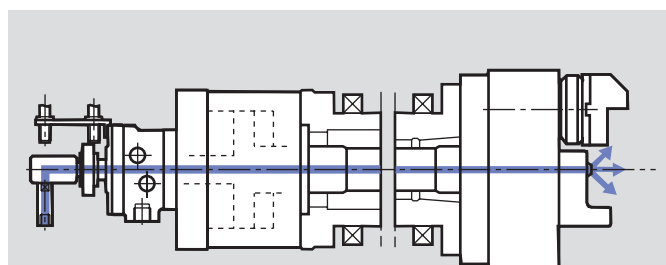
### Ordering example

TSF-C 210/A6  
or TSR-C 315/Z220



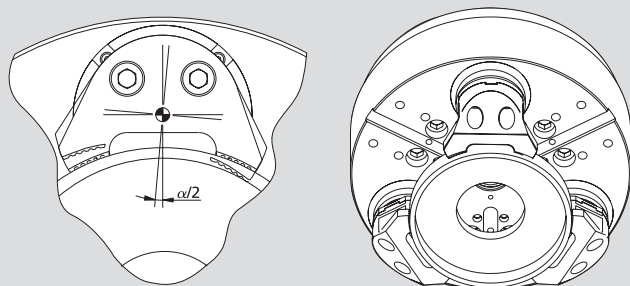
Principle of function:

- 1 pre-clamping - 2 active pull-down - 3 clamping
- For O.D. and I.D. clamping



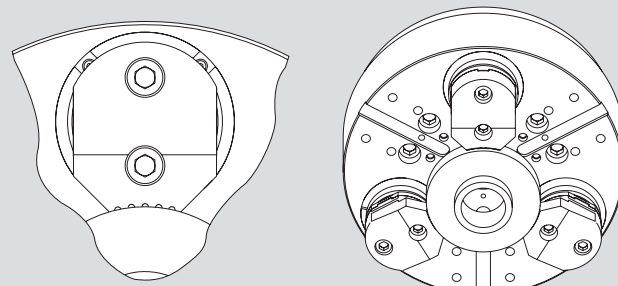
- TSF-C and TSR-C chucks operated with a SIN-S cylinder with central bore for air sensing/coolant flush

### TSF-C



**TSF-C: Floating jaws** for clamping raw/easy deformed workpieces with 6-point-contact

### TSR-C

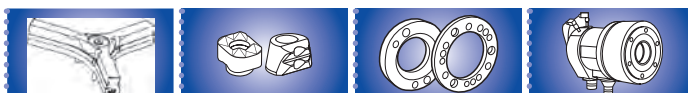


**TSR-C: Rigid jaws** for precise clamping on premachined diameters with 3-point-contact

## Technical data

| SMW-AUTOBLOK Type                 |        | TSF-C 170<br>TSR-C 170 | TSF-C 210<br>TSR-C 210 | TSF-C 250<br>TSR-C 250 | TSF-C 315<br>TSR-C 315 | TSF-C 400<br>TSR-C 400 | TSF-C 530<br>TSR-C 530 | TSF-C 650<br>TSR-C 650 |
|-----------------------------------|--------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Angular jaw stroke                | deg.   | 5.2°                   | 5.2°                   | 4.9°                   | 4.9°                   | 4.7°                   | 4.7°                   | 5°                     |
| Radial jaw stroke at distance h   | mm     | 5.3                    | 6.3                    | 7                      | 7                      | 7.5                    | 7.5                    | 9.8                    |
| Pull down movement (standard)     | mm     | 0.1                    | 0.1                    | 0.1                    | 0.1                    | 0.2                    | 0.2                    | 0.4                    |
| Axial piston stroke               | mm     | 21                     | 25                     | 25                     | 25                     | 30                     | 30                     | 32                     |
| Max. draw pull                    | kN     | 18                     | 25                     | 40                     | 40                     | 50                     | 60                     | 100                    |
| Max. gripping force at distance h | kN     | 44                     | 60                     | 96                     | 96                     | 120                    | 150                    | 180                    |
| Max. speed*                       | r.p.m. | 5000                   | 4500                   | 3800                   | 3000                   | 2200                   | 1800                   | 1600                   |
| Weight (without top jaws)         | kg     | 15                     | 27                     | 41                     | 66                     | 115                    | 196                    | 386                    |
| Moment of inertia                 | kg·m²  | 0.06                   | 0.16                   | 0.34                   | 0.83                   | 2.3                    | 7                      | 21                     |
| Recommended actuating cylinders   |        | SIN-S 85               | SIN-S 100              | SIN-S 125              | SIN-S 125              | SIN-S 150              | SIN-S 150-175          | SIN-S 150-175 200      |

\*The above maximum speed is allowed with standard weight/height top jaws and applying the full draw pull only. For more informations please contact SMW-AUTOBLOK.



on request:  
Tooling Standard  
Parts Catalog

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# High precision pull-down chucks Ø 170 - 650 mm

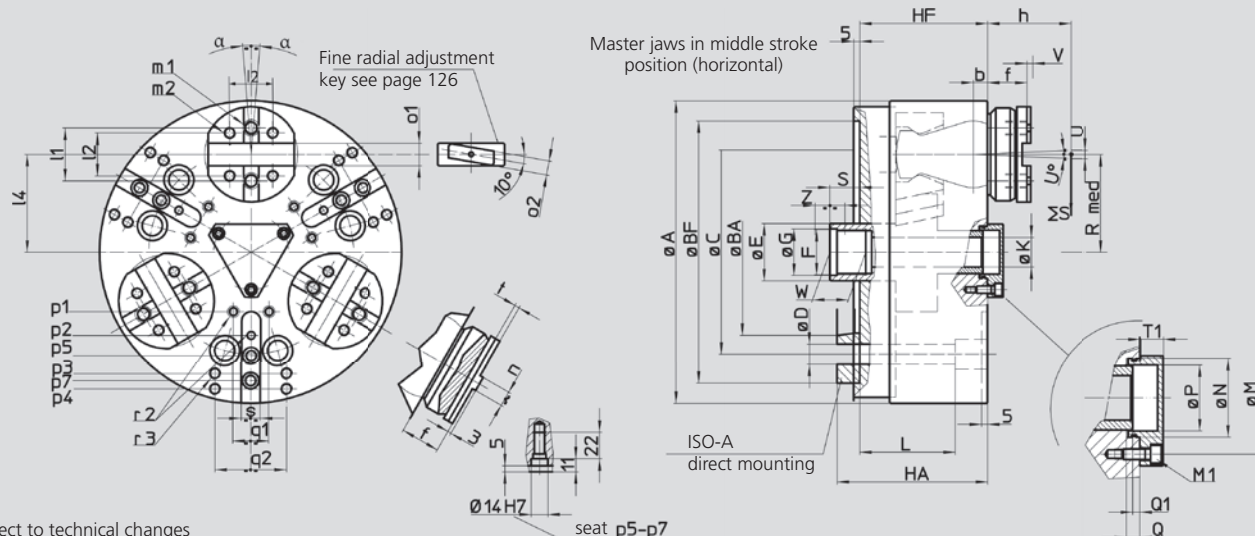
- active pull-down
- tongue & groove
- 3 jaws

## TSF-C

Self centering  
Floating jaws

## TSR-C

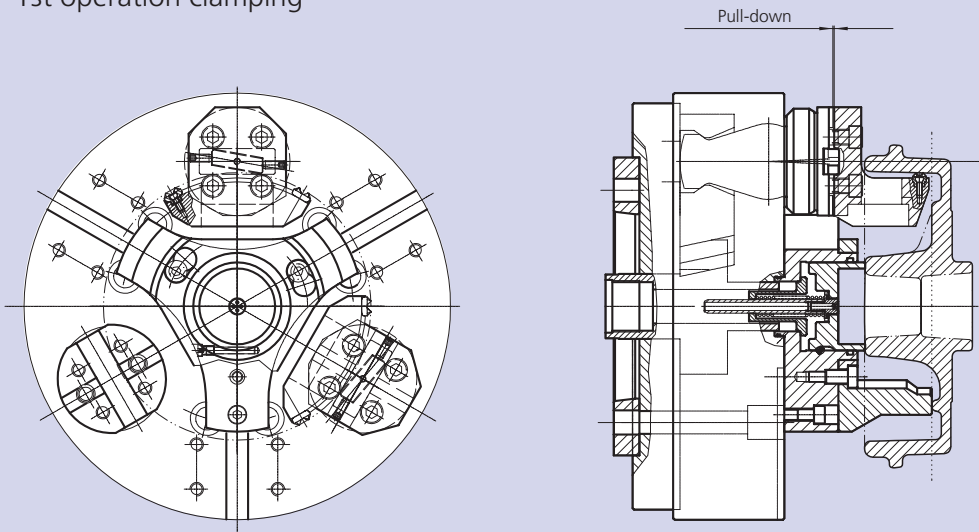
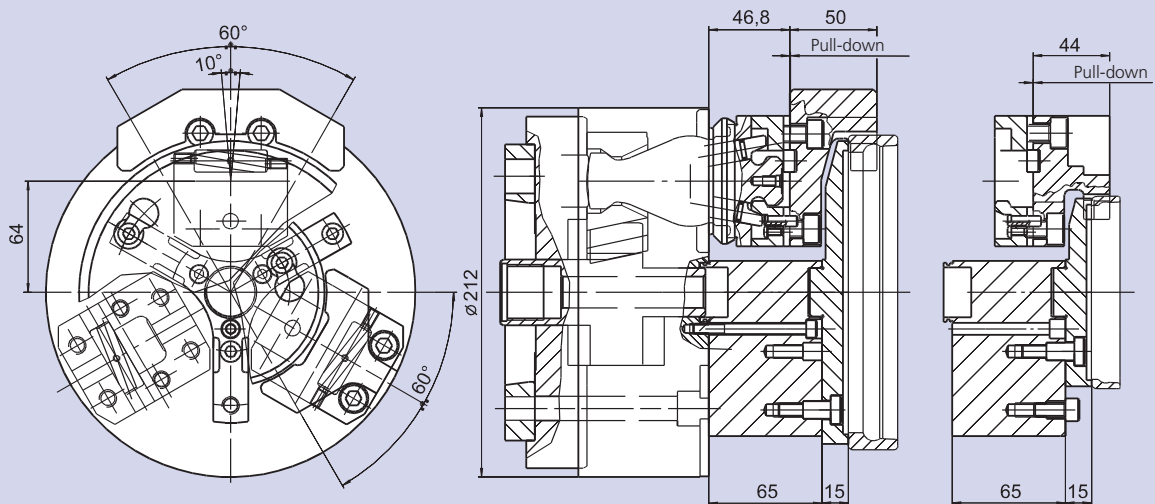
Self centering  
Rigid jaws



Subject to technical changes  
For more detailed information please ask for customer drawing

| SMW-AUTOBLOK    Type |       |       | TSF-C 170<br>TSR-C 170 |        |       |         | TSF-C 210<br>TSR-C 210 |         | TSF-C 250<br>TSR-C 250 |         | TSF-C 315<br>TSR-C 315 |         | TSF-C 400<br>TSR-C 400 |         | TSF-C 530<br>TSR-C 530 |         | TSF-C 650<br>TSR-C 650 |         |
|----------------------|-------|-------|------------------------|--------|-------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|
| Mounting             |       |       | Z140                   | A5     | Z160  | A6      | Z170                   | A6      | Z220                   | A8      | Z220                   | A8      | Z300                   | A11     | Z380                   | A15     | Z380                   | A15     |
|                      | A     | mm    | 173                    |        |       |         | 212                    |         | 254                    |         | 315                    |         | 390                    |         | 535                    |         | 650                    |         |
|                      | BF/BA | H6 mm | 140                    | 82.563 | 160   | 106.375 | 170                    | 106.375 | 220                    | 139.719 | 220                    | 139.719 | 300                    | 196.869 | 380                    | 285.775 | 380                    | 285.775 |
|                      | C     | mm    | 104.8                  |        | 133.4 |         | 133.4                  |         | 171.4                  |         | 171.4                  |         | 235                    |         | 330.2                  |         | 330.2                  |         |
|                      | D     | mm    | 11.5                   |        | 13.5  |         | 13.5                   |         | 17                     |         | 17                     |         | 21                     |         | 25                     |         | 25                     |         |
|                      | E     | mm    | 36                     |        |       |         | 38                     |         | 48                     |         | 48                     |         | 75                     |         | 75                     |         | 100                    |         |
|                      | F     | mm    | M28 x 1.5              |        |       |         | M32 x 1.5              |         | M38 x 1.5              |         | M38 x 1.5              |         | M60 x 1.5              |         | M60 x 1.5              |         | M80 x 2                |         |
|                      | G     | H8 mm | 29                     |        |       |         | 33                     |         | 39                     |         | 39                     |         | 61                     |         | 61                     |         | 81                     |         |
|                      | Hr/HA | mm    | 83                     | 98     | 83    | 100     | 100                    | 117     | 107                    | 126     | 107                    | 126     | 127                    | 148     | 132                    | 155     | 155                    | 178     |
|                      | K     | mm    | 14                     |        |       |         | 18                     |         | 25                     |         | 25                     |         | 52                     |         | 52                     |         | 75                     |         |
|                      | L     | mm    | 56                     |        |       |         | 82                     |         | 80                     |         | 80                     |         | 74                     |         | 77                     |         | 97                     |         |
|                      | M     | mm    | 36                     |        |       |         | 42                     |         | 63                     |         | 63                     |         | 90                     |         | 90                     |         | 128                    |         |
|                      | M1    | mm    | M5/13                  |        |       |         | M6/11                  |         | M6/12                  |         | M6/12                  |         | M8/17                  |         | M8/17                  |         | M8/17                  |         |
|                      | N     | H8 mm | 28                     |        |       |         | 34                     |         | 44                     |         | 44                     |         | 75                     |         | 75                     |         | 150                    |         |
|                      | P     | mm    | 23                     |        |       |         | 28.5                   |         | 37                     |         | 37                     |         | 66                     |         | 66                     |         | 101                    |         |
|                      | Q     | mm    | 6                      |        |       |         | 5.5                    |         | 7.5                    |         | 7.5                    |         | 9                      |         | 9                      |         | 19                     |         |
|                      | Q1    | mm    | 3                      |        |       |         | 2                      |         | 4                      |         | 4                      |         | 4                      |         | 4                      |         | 21                     |         |
|                      | Rmed  | mm    | 55                     |        |       |         | 64                     |         | 82                     |         | 107                    |         | 130                    |         | 190                    |         | 245                    |         |
|                      | S     | mm    | 18                     |        |       |         | 20                     |         | 25                     |         | 25                     |         | 25                     |         | 20                     |         | 20                     |         |
|                      | T1    | mm    | 10                     |        |       |         | 13                     |         | 13                     |         | 13                     |         | 15                     |         | 15                     |         | 15                     |         |
|                      | U°    | deg.  | 5.2°                   |        |       |         | 5.2°                   |         | 4.9°                   |         | 4.9°                   |         | 4.7°                   |         | 4.7°                   |         | 5°                     |         |
|                      | U     | mm    | 5.3                    |        |       |         | 6.3                    |         | 7                      |         | 7                      |         | 7.5                    |         | 7.5                    |         | 9.8                    |         |
|                      | V     | mm    | 0.1 (0.6)              |        |       |         | 0.1 (0.6)              |         | 0.1 (0.6)              |         | 0.1 (0.6)              |         | 0.2 (0.8)              |         | 0.2 (0.8)              |         | 0.4                    |         |
|                      | W     | mm    | 25                     |        |       |         | 25                     |         | 25                     |         | 25                     |         | 25                     |         | 25                     |         | 36                     |         |
|                      | Z     | mm    | 21                     |        |       |         | 25                     |         | 25                     |         | 25                     |         | 30                     |         | 30                     |         | 32                     |         |
|                      | α     | deg.  | ±2°                    |        |       |         | ±2°                    |         | ±1.5°                  |         | ±1.5°                  |         | ±1.5°                  |         | ±1.5°                  |         | ±1.3°                  |         |
|                      | b     | mm    | 9                      |        |       |         | 10                     |         | 12                     |         | 12                     |         | 12                     |         | 12                     |         | 12                     |         |
|                      | e     | mm    | 60                     |        |       |         | 75                     |         | 80                     |         | 80                     |         | 105                    |         | 105                    |         | 127                    |         |
|                      | f     | mm    | 27                     |        |       |         | 33                     |         | 33                     |         | 33                     |         | 32                     |         | 32                     |         | 46                     |         |
|                      | h     | mm    | 50                     |        |       |         | 60                     |         | 70                     |         | 70                     |         | 80                     |         | 80                     |         | 100                    |         |
|                      | j     | mm    | 55                     |        |       |         | 65                     |         | 72                     |         | 72                     |         | 100                    |         | 100                    |         | 116                    |         |
|                      | l1    | mm    | 32                     |        |       |         | 38                     |         | 44.4                   |         | 44.4                   |         | 63.5                   |         | 63.5                   |         | 63.5                   |         |
|                      | l2    | mm    | 24                     |        |       |         | 32                     |         | 36                     |         | 36                     |         | 48                     |         | 48                     |         | 54                     |         |
|                      | m1    | mm    | M10/16                 |        |       |         | M12/18                 |         | M12/18                 |         | M12/18                 |         | M16/22                 |         | M16/22                 |         | M20/26                 |         |
|                      | m2    | mm    | M8/14                  |        |       |         | M10/14                 |         | M10/14                 |         | M10/14                 |         | M12/22                 |         | M12/22                 |         | M16/24                 |         |
|                      | n     | h8 mm | 7.94                   |        |       |         | 7.94                   |         | 12.7                   |         | 12.7                   |         | 12.7                   |         | 12.7                   |         | 12.7                   |         |
|                      | o1    | H7 mm | 12.68                  |        |       |         | 12.68                  |         | 19.03                  |         | 19.03                  |         | 19.03                  |         | 19.03                  |         | 19.03                  |         |
|                      | o2    | h7 mm | 9                      |        |       |         | 9                      |         | 12                     |         | 12                     |         | 12                     |         | 12                     |         | 12                     |         |
|                      | p1    | mm    | -                      |        |       |         | 30                     |         | 50                     |         | 60                     |         | (*)                    |         | (*)                    |         | (*)                    |         |
|                      | p2    | mm    | 35                     |        |       |         | -                      |         | 70                     |         | 80                     |         | (*)                    |         | (*)                    |         | (*)                    |         |
|                      | p3    | mm    | 65                     |        |       |         | 80                     |         | 102                    |         | 102                    |         | (*)                    |         | (*)                    |         | (*)                    |         |
|                      | p4    | mm    | -                      |        |       |         | -                      |         | -                      |         | 135                    |         | (*)                    |         | (*)                    |         | (*)                    |         |
|                      | p5    | mm    | -                      |        |       |         | 87                     |         | 87                     |         | -                      |         | (*)                    |         | (*)                    |         | (*)                    |         |
|                      | p7    | mm    | -                      |        |       |         | -                      |         | 108                    |         | 108                    |         | (*)                    |         | (*)                    |         | (*)                    |         |
|                      | q1    | mm    | -                      |        |       |         | 8                      |         | 30                     |         | 30                     |         | (*)                    |         | (*)                    |         | (*)                    |         |
|                      | q2    | mm    | 36                     |        |       |         | 45                     |         | 60                     |         | 60                     |         | (*)                    |         | (*)                    |         | (*)                    |         |
|                      | r2    | mm    | M6/12                  |        |       |         | M6/12                  |         | M8/15                  |         | M8/15                  |         | (*)                    |         | (*)                    |         | (*)                    |         |
|                      | r3    | mm    | M8/17                  |        |       |         | M8/17                  |         | M10/19                 |         | M10/19                 |         | (*)                    |         | (*)                    |         | (*)                    |         |
|                      | s     | mm    | 16                     |        |       |         | 16                     |         | 16                     |         | 16                     |         | (*)                    |         | (*)                    |         | (*)                    |         |
|                      | t     | mm    | 4                      |        |       |         | 4                      |         | 4                      |         | 4                      |         | 7                      |         | 7                      |         | 7                      |         |
|                      | vF    | mm    | 5                      |        |       |         | 5                      |         | 5                      |         | 5                      |         | 5                      |         | 5                      |         | 6                      |         |

## Clamping examples

**Brake drum – 1st operation clamping****Bearing ring – 2nd operation clamping****Bearing flange – Complete machining in one set-up**