

NEW

Member IMC Group
Ingersoll
Cutting Tools

CHIPSURFER

THREAD MILLS 17Y_/18Y_ 55°/60°

THREAD MILL 17Y_/18Y_ 55°/60°

- Maximum flexibility •*
- High economical •*
- Process reliable •*
- With ChipSurfer connection •*
- For Internal and external threads •*



Product Overview

The new screw-in type thread milling cutters are an addition to the existing **ChipSurfer** series 17Y_/18Y_ in partial profil range 55°/60°.

This cutter series has **ChipSurfer** connections in maximum diameter range for reliable and highly effective machining, even in deep threads.

Application Range

The new thread milling cutters are used wherever radial displacement is an issue due to unfavorable L/D ratios and process safety has top priority.

Technical Features

The use of **ChipSurfer** connections results in flexibility with regard to the required overhang lengths and collision situations. These connections are widespread in mould & die industry and enable an effective, economical and flexible solution for thread machining.

The maximum number of effective teeth selected increase productivity and ensure a smooth cut with maximum tool life.

The coating, which improves service life, causes less radial displacement, due to premature cutting edge wear, and thus for the best dimensional accuracy of the threads to be finished.

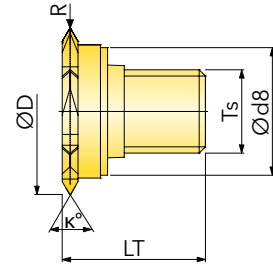
Advantages

- Internal and external threads can be produced with only one tool
- 5 or 6 effective cutting edges (depending on diameter)
- Tightening by Torx
- Wear-resistant coating
- ChipSurfer connection
- Highly productive – process reliable – flexible
- Achieves top surfaces and maximum dimensional accuracy



CHIPSURFER THREAD MILL 55° / 60° Z 5-6

FOR EXCHANGEABLE HEAD SYSTEM



Grade

IN2005

| | | | | | |
|---|---|---|------------------|------------------|-------------------|
| P | M | K | N _(K) | S _(M) | H _(PK) |
| + | + | + | ○ | + | ○ |

+ first choice ○ second choice

| Designation | D | LT | κ | R | Ts | P | TPI | Pi | Pe | fine thread Ø | BSP | Z | d8 | kg | ^①  |
|-----------------|-------|-------|----|------|-----|----------|-------|----------|----------|---------------|--------------|---|------|-------|--------------------------------------------------------------------------------------------------|
| 17Y11905T6RP600 | 11,94 | 10 | 60 | 0,05 | T05 | 0,4-0,8 | - | 0,5-0,8 | 0,4-0,8 | ≥M14 | - | 5 | 7,6 | 0,005 | DS-T20T |
| 17Y11910TQRP600 | 11,94 | 10 | 60 | 0,11 | T05 | 0,8-1,75 | - | 1,0-1,75 | 0,8-1,5 | ≥M14 | - | 5 | 7,6 | 0,015 | DS-T20T |
| 17Y11920TQRP600 | 11,94 | 10,5 | 60 | 0,22 | T05 | 1,75-2,5 | - | 2,0-2,5 | 1,75-2,0 | ≥M16 | - | 5 | 7,6 | 0,013 | DS-T20T |
| 17Y15905T8RP600 | 15,94 | 11,25 | 60 | 0,05 | T08 | 0,4-0,8 | - | 0,5-0,8 | 0,4-0,8 | ≥M18 | - | 5 | 11,5 | 0,010 | DS-T40L |
| 17Y15910T8RP600 | 15,94 | 11,25 | 60 | 0,10 | T08 | 0,8-1,75 | - | 1,0-1,75 | 0,8-1,5 | ≥M18 | - | 5 | 11,5 | 0,010 | DS-T40L |
| 17Y15920T6RP600 | 15,94 | 10,8 | 60 | 0,22 | T06 | 1,75-3,0 | - | 2,0-3,0 | 1,75-2,5 | ≥M20 | - | 5 | 9,6 | 0,017 | DS-T25T |
| 18Y19910TRRP600 | 19,94 | 17,2 | 60 | 0,11 | T10 | 0,8-2,0 | - | 1,0-2,0 | 0,8-1,75 | ≥M24 | - | 6 | 16,0 | 0,027 | DS-T40L |
| 18Y19920T8RP600 | 19,94 | 12,75 | 60 | 0,22 | T08 | 1,75-3,0 | - | 2,0-3,0 | 1,75-2,5 | ≥M24 | - | 6 | 11,5 | 0,024 | DS-T40L |
| 18Y19930T8RP600 | 19,94 | 12,75 | 60 | 0,31 | T08 | 2,5-4,0 | - | 3,0-4,0 | 2,5-3,5 | ≥M25 | - | 6 | 11,5 | 0,020 | DS-T25T |
| 17Y27750TRRP600 | 27,7 | 18,2 | 60 | 0,57 | T10 | 4,5-6,0 | - | 5,0-6,0 | 4,5-5,0 | ≥M38 | - | 5 | 16,0 | 0,056 | DS-T40L |
| 18Y27730TSRP600 | 27,7 | 22,5 | 60 | 0,34 | T10 | 2,5-5,0 | - | 3,0-5,0 | 2,5-4,5 | ≥M33 | - | 6 | 16,0 | 0,063 | DS-T40L |
| 17Y11911TQRP550 | 11,94 | 10 | 55 | 0,23 | T05 | - | 11-14 | - | - | - | G 1/2- G 7/8 | 5 | 7,6 | 0,010 | DS-T20T |
| 18Y11919TQRP550 | 11,94 | 10 | 55 | 0,11 | T05 | - | 19-28 | - | - | - | G 3/8 | 6 | 7,6 | 0,015 | DS-T20T |
| 18Y15980T6RP550 | 15,94 | 10,8 | 55 | 0,23 | T06 | - | 8-14 | - | - | - | G ≥1/2 | 6 | 9,6 | 0,017 | DS-T25T |

① = wrench

Thread mill 17Y_ / 18Y_ 55° / 60°



Recommended Cutting Data:

| ISO | material no. | Vc [m/min] | | feed per tooth fz [mm] (outer contour) | | | | | | |
|-----|--------------|------------|--------|----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | grade | | tool-Ø [mm] | | | | | | |
| | | IN2005 | IN1530 | 10 | 12 | 16 | 20 | 22 | 28 | 34 |
| P | 1 | 60-120 | 48-96 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,12-0,17 | 0,15-0,20 | 0,15-0,22 |
| | 2 | 60-120 | 48-96 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 3 | 60-90 | 48-72 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 4 | 60-120 | 48-96 | 0,07-0,10 | 0,08-0,11 | 0,12-0,16 | 0,13-0,18 | 0,14-0,19 | 0,16-0,21 | 0,16-0,23 |
| | 5 | 60-90 | 48-72 | 0,07-0,10 | 0,08-0,11 | 0,12-0,16 | 0,13-0,18 | 0,14-0,19 | 0,16-0,21 | 0,16-0,23 |
| | 6 | 60-120 | 48-96 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 7 | 60-120 | 48-96 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 8 | 60-120 | 48-96 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 9 | 60-120 | 48-96 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 10 | 50-80 | 40-64 | 0,05-0,07 | 0,06-0,08 | 0,10-0,14 | 0,11-0,15 | 0,10-0,16 | 0,14-0,18 | 0,14-0,20 |
| | 11 | 50-80 | 40-64 | 0,05-0,07 | 0,06-0,08 | 0,10-0,14 | 0,11-0,15 | 0,10-0,16 | 0,14-0,18 | 0,14-0,20 |
| | 12 | 70-100 | 56-80 | 0,05-0,06 | 0,06-0,07 | 0,10-0,13 | 0,11-0,14 | 0,10-0,15 | 0,14-0,16 | 0,14-0,20 |
| | 13 | 70-100 | 56-90 | 0,05-0,06 | 0,06-0,07 | 0,10-0,13 | 0,11-0,14 | 0,10-0,15 | 0,14-0,16 | 0,14-0,20 |
| M | 14 | 60-80 | 48-72 | 0,05-0,06 | 0,06-0,07 | 0,10-0,13 | 0,11-0,14 | 0,10-0,15 | 0,14-0,16 | 0,14-0,20 |
| K | 15 | 40-80 | 32-64 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 16 | 40-80 | 32-60 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 17 | 40-80 | 32-64 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 18 | 40-80 | 32-64 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 19 | 40-80 | 32-64 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 20 | 40-80 | 32-64 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 21 | 100-160 | 80-128 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| N | 22 | 100-200 | 80-160 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 23 | 60-140 | 48-112 | 0,05-0,07 | 0,06-0,08 | 0,10-0,14 | 0,11-0,15 | 0,12-0,16 | 0,14-0,18 | 0,14-0,20 |
| | 24 | 60-140 | 48-112 | 0,05-0,07 | 0,06-0,08 | 0,10-0,14 | 0,11-0,15 | 0,12-0,16 | 0,14-0,18 | 0,14-0,20 |
| | 25 | 60-140 | 48-112 | 0,05-0,07 | 0,06-0,08 | 0,10-0,14 | 0,11-0,15 | 0,12-0,16 | 0,14-0,18 | 0,14-0,20 |
| | 26 | 100-200 | 80-160 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,17-0,22 | 0,17-0,24 |
| | 27 | 100-200 | 80-160 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 28 | 100-200 | 80-160 | 0,06-0,09 | 0,07-0,10 | 0,11-0,15 | 0,12-0,17 | 0,13-0,18 | 0,15-0,20 | 0,15-0,22 |
| | 29 | 50-200 | 40-160 | 0,07-0,10 | 0,08-0,11 | 0,12-0,16 | 0,13-0,18 | 0,14-0,19 | 0,16-0,21 | 0,16-0,23 |
| | 30 | 50-185 | 40-148 | 0,07-0,10 | 0,08-0,11 | 0,12-0,16 | 0,13-0,18 | 0,14-0,19 | 0,16-0,21 | 0,16-0,23 |
| | S | 31 | 20-40 | 16-32 | 0,03-0,05 | 0,04-0,06 | 0,06-0,08 | 0,09-0,11 | 0,10-0,12 | 0,08-0,12 |
| 32 | | 20-40 | 16-32 | 0,03-0,05 | 0,04-0,06 | 0,06-0,08 | 0,09-0,11 | 0,10-0,12 | 0,08-0,12 | 0,08-0,13 |
| 33 | | 20-40 | 16-32 | 0,03-0,05 | 0,04-0,06 | 0,06-0,08 | 0,09-0,11 | 0,10-0,12 | 0,08-0,12 | 0,08-0,13 |
| 34 | | 20-40 | 16-32 | 0,03-0,05 | 0,04-0,06 | 0,06-0,08 | 0,09-0,11 | 0,10-0,12 | 0,08-0,12 | 0,08-0,13 |
| 35 | | 20-40 | 16-32 | 0,03-0,05 | 0,04-0,06 | 0,06-0,08 | 0,09-0,11 | 0,10-0,12 | 0,08-0,12 | 0,08-0,13 |
| 36 | | 18-40 | 14-32 | 0,03-0,05 | 0,04-0,06 | 0,06-0,08 | 0,09-0,11 | 0,10-0,12 | 0,08-0,12 | 0,08-0,13 |
| 37 | | 15-30 | 12-24 | 0,03-0,05 | 0,04-0,06 | 0,06-0,08 | 0,09-0,11 | 0,10-0,12 | 0,08-0,12 | 0,08-0,13 |
| H | 38 | 50-60 | 40-48 | 0,04-0,06 | 0,05-0,07 | 0,07-0,09 | 0,10-0,12 | 0,11-0,13 | 0,09-0,13 | 0,09-0,14 |
| | 39 | 42-50 | 33-40 | 0,03-0,05 | 0,04-0,05 | 0,04-0,06 | 0,10-0,12 | 0,11-0,13 | 0,09-0,13 | 0,09-0,14 |
| | 40 | 30-50 | 24-40 | 0,03-0,05 | 0,04-0,05 | 0,04-0,06 | 0,10-0,12 | 0,11-0,13 | 0,09-0,13 | 0,09-0,14 |
| | 41 | 20-40 | 16-32 | 0,03-0,05 | 0,04-0,06 | 0,04-0,05 | 0,10-0,12 | 0,11-0,13 | 0,09-0,13 | 0,09-0,14 |

* Reduce feed rate by 40% for large overhangs

CHIPSURFER 17Y_ / 18Y_ MATERIAL GROUPS

| ISO | material | condition | tensile strength (N/mm ²) | hardn. (HB) | material no. | |
|---------------------|---------------------------------------------------------|------------------------------|---------------------------------------|-------------|--------------|----|
| P | unalloyed steel and steel casting, free cutting steel | < 0,25% | annealed | 420 | 125 | 1 |
| | | > 0,25% | annealed | 650 | 190 | 2 |
| | | < 0,55% | quenched and annealed | 850 | 250 | 3 |
| | | ≥ 0,55% | annealed | 750 | 220 | 4 |
| | | | quenched and annealed | 1000 | 300 | 5 |
| | low alloyed steel, steel casting (less than 5% alloyes) | annealed | 600 | 200 | 6 | |
| | | quenched and annealed | 930 | 275 | 7 | |
| | | quenched and annealed | 1000 | 300 | 8 | |
| | | quenched and annealed | 1200 | 350 | 9 | |
| | high alloyed steel, steel casting, tool steel | annealed | 680 | 200 | 10 | |
| | | quenched and annealed | 1100 | 325 | 11 | |
| | stainless steel, steel casting | ferritic / martensitic | 680 | 200 | 12 | |
| | | martensitic | 820 | 240 | 13 | |
| M | stainless steel | austenitic | 600 | 180 | 14 | |
| K | gray cast iron (GG) | ferritic | | 160 | 15 | |
| | | pearlitic | | 250 | 16 | |
| | nodular cast iron (GGG) | ferritic / pearlitic | | 180 | 17 | |
| | | pearlitic | | 260 | 18 | |
| | malleable cast iron | ferritic | | 130 | 19 | |
| | | pearlitic | | 230 | 20 | |
| N | aluminum forge alloys | not hardenable | | 60 | 21 | |
| | | hardened | | 100 | 22 | |
| | aluminum cast iron | ≤ 12% Si | not hardenable | | 75 | 23 |
| | | > 12% Si | hardened | | 90 | 24 |
| | | high temperature | | 130 | 25 | |
| | copper alloys | ≥ 1% Pb | optional | | 110 | 26 |
| | | | brass | | 90 | 27 |
| | | electrolytic copper | | 100 | 28 | |
| | non metal | duroplaste / fibre composite | | | | 29 |
| | | ebonite | | | | 30 |
| S | high temperature alloys | Fe-base | annealed | | 200 | 31 |
| | | | hardened | | 280 | 32 |
| | | Ni- or Co-base | annealed | | 250 | 33 |
| | | | hardened | | 350 | 34 |
| | | | cast | | 320 | 35 |
| | titanium, titanium alloys | alpha/beta hardened | RM 400 | | | 36 |
| alpha/beta hardened | | RM 1050 | | | 37 | |
| H | hardened steel | hardened | | 55 HRC | 38 | |
| | | hardened | | 60 HRC | 39 | |
| | killed cast | cast | | 400 | 40 | |
| | gray cast (GG) | hardend | | 55 HRC | 41 | |

* Reduce feed rate by 40% for large overhangs

Ingersoll Cutting Tools

Marketing & Technology

Germany / Allemagne

Ingersoll Werkzeuge GmbH

Kalteiche-Ring 21-25

35708 Haiger, Germany

Phone: +49 2773 742-0

Fax: +49 2773 742-812

Email: info@ingersoll-imc.de

Internet: www.ingersoll-imc.de

France

Ingersoll France

22, rue Albert Einstein

F-77420 CHAMPS-sur-MARNE

Téléphone: +33 164684536

Fax: +33 164684524

E-Mail: info@ingersoll-imc.fr

Site web: www.ingersoll-imc.fr



CHIPSURFER



www.ingersoll-imc.de