

Number of Cutting Edges:
2

Insert Widths:
.118" (3mm)
.157" (4mm)
60° Partial Profile Threading

Cutting Depths:
Grooving: Up to .236" (6mm)
Turning: .016" ~ .095"
(0.4mm ~ 2.4mm)

Feed Rates:
Grooving: .003" ~ .010" ipr
(0.07 ~ 0.25mm/rev)
Turning: .006" ~ .010" ipr
(0.15 ~ 0.24mm/rev)

Grades:
TT9080 - General Purpose

Holders:
1.00" parallel and
perpendicular style
25mm holders available
from overseas stock
With or without COOLBURST
internal coolant supply

Face Grooving, External Grooving and External Threading System with Innovative 2-Edge Insert

Features & Benefits:

- Robust clamping includes anti-rotation triangular grooves on the bottom side of the insert along with a strong screw clamping design to eliminate movement in the pocket
- Thick insert design increases stiffness to protect against breakage.
- In the event of an edge failure, the insert can be rotated 180° without impacting seating stability
- Holder is designed without a need for an upper or lower clamping jaw
 - Excellent chip evacuation without interference of an upper jaw
 - Holder breakage is eliminated due to absence of a lower jaw
 - One holder used for multiple insert widths
- Wide variety of applications including face grooving and turning, external grooving and turning and external threading
- Insert widths 3mm & 4mm (.118" & .157") and 60° partial profile threading
- 1.00" parallel and perpendicular style holders, left and right-hand
- Optional COOLBURST[™] internal coolant supply for improved chip evacuation





FACEFLEX™ FEATURES

A common challenge to overcome when face grooving is the tendency for tools to fail during machining due to poor chip evacuation. Traditional face grooving holders are vulnerable to breakage due to chips getting stuck in the groove or pinched between the bottom support blade and the work piece. To solve this issue, Ingersoll has introduced FaceFlex, an innovative 2-edge insert featuring a very stable clamping system that eliminates the top and bottom support blades.

Each FaceFlex insert has anti-rotational triangular grooves on the bottom side. Combined with a screw clamping design the insert is very stable when seated in the holder and will not rotate or move during machining. Furthermore, if the cutting edge in use is damaged during machining, the opposite side of the cutting edge is still fully functional and the insert seating will not be impacted.

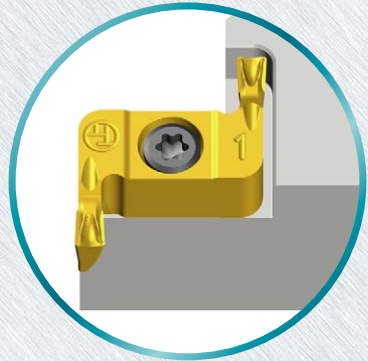
A thick insert provides strength and stiffness which improves stability and prevents abrupt breakage. The screw-type clamping eliminates a need for an upper jaw to hold the insert in place. The absence of a lower jaw coupled with the thick insert and rigid clamping system eliminates breakage of the holder during grooving applications. The result is extremely stable machining even under harsh cutting conditions.

FaceFlex can be applied in a wide variety of applications such as external grooving and turning, face grooving and turning, and external threading. With stable machining and tool life it's certain to greatly increase productivity, making it an excellent addition to the SFEEDUP family of products.

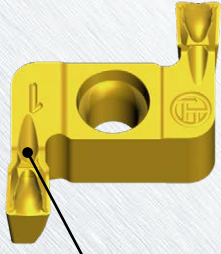




FACEFLEX™ INSERT FEATURES



Screw clamping type.
Even with one damaged edge,
the other edge is usable.



Coolant channel



Anti-rotation grooves

FACEFLEX™ VARIOUS APPLICATIONS

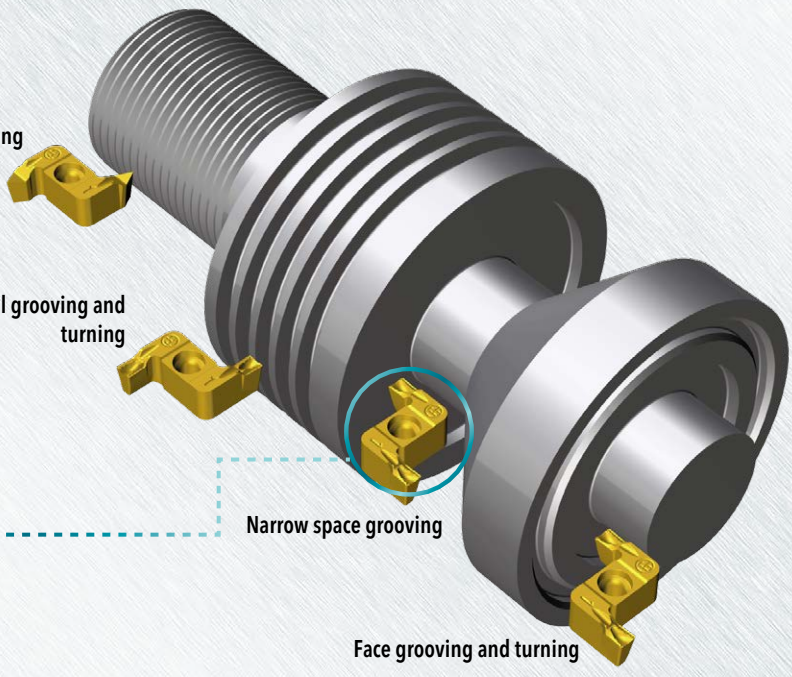


Threading

External grooving and turning


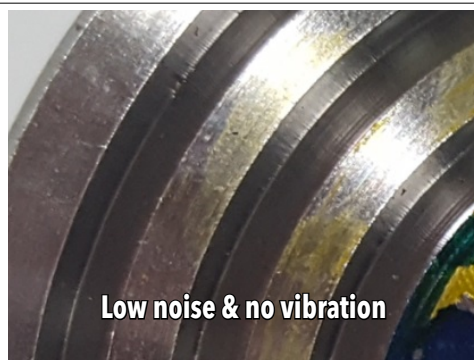
Narrow space grooving

Face grooving and turning



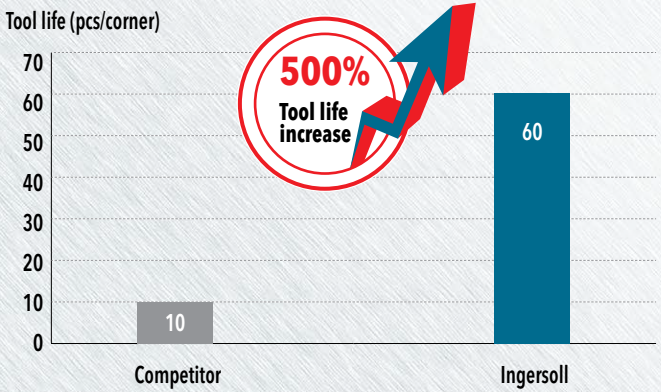


FACEFLEX™ CASE STUDY 1

| | | Competitor | Ingersoll |
|------------------|-----------|--|---|
| Material | | AISI 1045 | |
| Operation | | Face grooving | |
| Insert | | Conventional grooving insert | TDFX 3E-0.3-D24R TT9080 |
| Cutting speed | V (sfm) | 650 | 650 |
| Feed rate | f (ipr) | .004 | .004 |
| Depth of cut | ap (inch) | .157 | .157 |
| Coolant | | wet | wet |
| Machined surface | |  |  |

FACEFLEX™ CASE STUDY 2

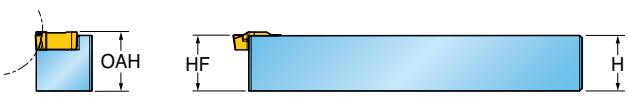
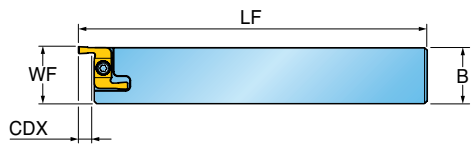
| | | Competitor | Ingersoll |
|-------------------------|-----------|------------------------------|-------------------------|
| Material | | AISI 1045 | |
| Operation | | Face grooving | |
| Insert | | Conventional grooving insert | TDFX 3E-0.3-D24R TT9080 |
| Cutting speed | V (sfm) | 650 | 650 |
| Feed rate | f (ipr) | .004 | .004 |
| Depth of cut | ap (inch) | .157 | .157 |
| Coolant | | wet | wet |
| Tool life (pass/corner) | | 10 | 60 |





FACEFLEX™ SERIES TXFR/L

HOLDERS FOR SHALLOW FACE GROOVING, TURNING & EXTERNAL THREADING



Right hand shown

| Part Number | Dimension (inch) | | | | | | | Insert |
|-------------|------------------|----------------------|---------------|----------------------|--------------------|---------------------|------------------------|----------|
| | H Shank Height | HF Functional Height | B Shank Width | LF Functional Length | OAH Overall Height | WF Functional Width | CDX Cutting Depth Max. | |
| TXFR 25.4 | 1.000 | 1.000 | 1.000 | 6.28 | 1.04 | 1.020 | .236 | TD_X...R |
| TXFL 25.4 | 1.000 | 1.000 | 1.000 | 6.28 | 1.04 | 1.020 | .236 | TD_X...L |

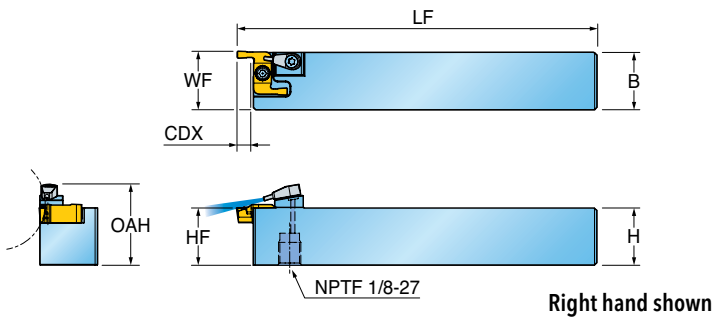
Spare Parts

| Part Number | Screw | Wrench | |
|-------------|-------------|--------|--|
| | | | |
| TXFR 25.4 | SM35-110-00 | T 15 | |
| TXFL 25.4 | TS 35110IL | T 15 | |



FACEFLEX™ SERIES TXFR/L-TB

HOLDERS FOR SHALLOW FACE GROOVING, TURNING & EXTERNAL THREADING WITH HIGH-PRESSURE COOLANT



| Part Number | Dimension (inch) | | | | | | | Insert |
|--------------|------------------|----------------------|---------------|----------------------|--------------------|---------------------|------------------------|----------------------|
| | H Shank Height | HF Functional Height | B Shank Width | LF Functional Length | OAH Overall Height | WF Functional Width | CDX Cutting Depth Max. | |
| TXFR 25.4-TB | 1.000 | 1.000 | 1.000 | 6.28 | 1.04 | 1.020 | .236 | TD_X...R TD_X...L |
| TXFL 25.4-TB | 1.000 | 1.000 | 1.000 | 6.28 | 1.04 | 1.020 | .236 | |

| Part Number | 1000 psi flow rate (gpm) | 1500 psi flow rate (gpm) | 2000 psi flow rate (gpm) |
|--------------|--------------------------|--------------------------|--------------------------|
| TXFR 25.4-TB | 19-26 | 26-34 | 30-38 |
| TXFL 25.4-TB | 19-26 | 26-34 | 30-38 |

Spare Parts

| Part Number | Screw | Wrench | Cooling Unit |
|--------------|-------------|--------|--------------|
| TXFR 25.4-TB | SM35-110-00 | T 15 | S-CU-TB |
| TXFL 25.4-TB | TS 35110IL | T 15 | S-CU-TB |



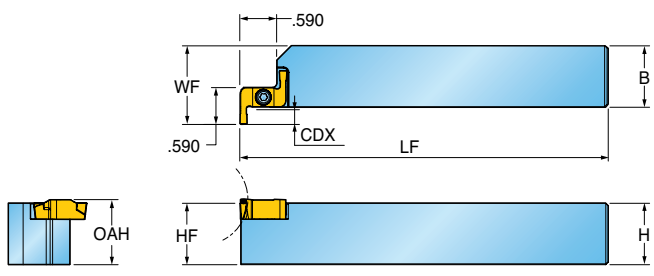
FACEFLEX™ SERIES TXFPR/L

PERPENDICULAR HOLDERS FOR SHALLOW FACE GROOVING & TURNING



Face Groove

Face Groove/Turn



Right hand shown

| Part Number | Dimension (inch) | | | | | | | Insert |
|-------------|------------------|----------------------|---------------|----------------------|--------------------|---------------------|------------------------|----------|
| | H Shank Height | HF Functional Height | B Shank Width | LF Functional Length | OAH Overall Height | WF Functional Width | CDX Cutting Depth Max. | |
| TXFPR 25.4 | 1.000 | 1.000 | 1.000 | 6.0 | 1.04 | 1.275 | .236 | TDFX...R |
| TXFPL 25.4 | 1.000 | 1.000 | 1.000 | 6.0 | 1.04 | 1.275 | .236 | TDFX...L |

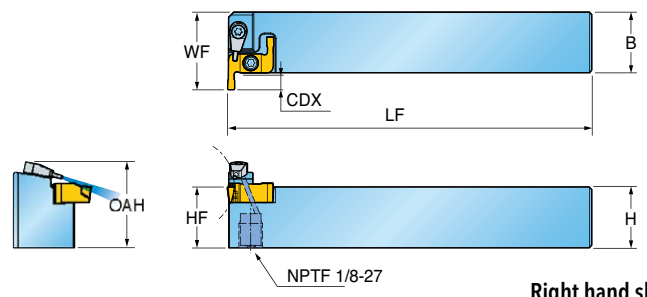
Spare Parts

| Part Number | Screw | Wrench |
|-------------|-------------|--------|
| | | |
| TXFPR 25.4 | SM35-110-00 | T 15 |
| TXFPL 25.4 | TS 35110IL | T 15 |



FACEFLEX™ SERIES TXFPR/L-TB

PERPENDICULAR HOLDERS FOR SHALLOW FACE GROOVING & TURNING WITH HIGH-PRESSURE COOLANT



| Part Number | Dimension (inch) | | | | | | | Insert |
|---------------|------------------|----------------------|---------------|----------------------|--------------------|---------------------|------------------------|-----------|
| | H Shank Height | HF Functional Height | B Shank Width | LF Functional Length | OAH Overall Height | WF Functional Width | CDX Cutting Depth Max. | |
| TXFPR 25.4-TB | 1.000 | 1.000 | 1.000 | 6.0 | 1.40 | 1.275 | .236 | TDFX ...R |
| TXFPL 25.4-TB | 1.000 | 1.000 | 1.000 | 6.0 | 1.40 | 1.275 | .236 | TDFX ...L |

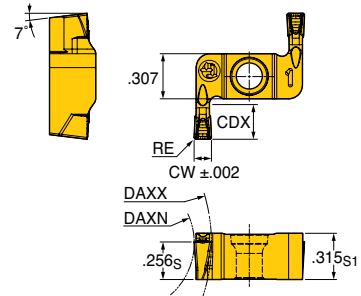
| Part Number | 1000 psi flow rate (gpm) | 1500 psi flow rate (gpm) | 2000 psi flow rate (gpm) |
|---------------|--------------------------|--------------------------|--------------------------|
| TXFPR 25.4-TB | 19-26 | 26-34 | 30-38 |
| TXFPL 25.4-TB | 19-26 | 26-34 | 30-38 |

Spare Parts

| Part Number | Screw | Wrench | Cooling Unit |
|-------------|-------------|--------|--------------|
| TXFPR-TB | SM35-110-00 | T 15 | S-CU-TB |
| TXFPL-TB | TS 35110IL | T 15 | S-CU-TB |



FACEFLEX™ SERIES TDFX DOUBLE-ENDED INSERTS FOR FACE GROOVING AND TURNING



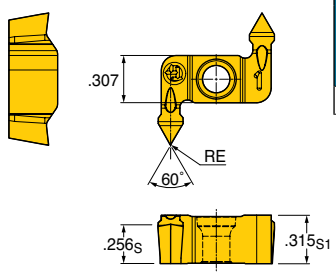
| Size | Dimensions (inch) | | | | |
|------|-------------------|------------------|------------------------|-------------------------------------|-------------------------------------|
| | CW Cutting Width | RE Corner Radius | CDX Cutting Depth Max. | DAXN Axial Groove Outside Dia. Min. | DAXX Axial Groove Outside Dia. Max. |
| 3 | .118 | .012 | .236 | .945 | No Limit |
| 4 | .157 | .016 | .236 | 1.260 | No Limit |

Right hand shown

| Part Number | Turning | | Grooving | Coated |
|--------------------|------------------------|------------|------------|--------|
| | ap Depth of Cut (inch) | Feed (ipr) | Feed (ipr) | TT9080 |
| TDFX 3E-0.3-D24R/L | .016-.071 | .006-.008 | .003-.008 | • |
| TDFX 4E-0.4-D32R/L | .020-.095 | .006-.010 | .004-.010 | • |

•: Standard items

FACEFLEX™ SERIES TDGX DOUBLE-ENDED THREADING INSERTS WITH 60° PARTIAL PROFILE



| Size | Dimensions | | | | |
|------|------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| | RE Corner Radius | TPN Thread Pitch Min. (mm) | TPX Thread Pitch Max. (mm) | TPIN Threads Per Inch Min. | TPIX Threads Per Inch Max. |
| 4 | 0.05mm (.002") | 0.45 | 3.5 | 8 | 56 |

Right hand shown

| Part Number | Coated |
|-------------------|--------|
| | TT9080 |
| TDGX 4MT-0.05-R/L | • |

•: Standard items