

# SPEX Explosive Jet Cutters

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**SPEX Offshore (UK) Ltd.** offers a complete range of WT Bell® explosive Jet Cutters for severing virtually all sizes of tubing, casing, and drillpipe.

All of the cutters contain a high precision factory pressed HMX or HNS shaped charge assembly that contains the minimum amount of explosive to cut the specified target. Temperature and pressure ratings are dependent on the individual cutter specification. The cutters are only designed to cut one string; hence they can be run in multiple casing strings without any damage to the external casing. The cutters produce a minimum amount of flaring on the severed pipe. Due to the unique UN packaging, the cutters (1.4D Classification) can be flown on cargo aircraft without restriction.

## Principles of Operation

The charge assembly consists of the housing containing the shaped charge, a collapsible aluminium extension mandrel to help absorb the shock from the explosion, and an electrical crossover to connect to the wireline weight bars and CCL tool. The wireline CCL is used to accurately position the cutter before detonation. SPEX utilises 'RF-safe' detonators and depending on tool and deployment selection, are either the EBW or Electronic coded detonator, both designed to provide reliable and safe initiation without the need for radio silence.

Alternative methods of running the cutters are on coiled tubing with an APFH firing head or with internal electric line, and on slickline trigger.



Examples of cuts made with WT Bell® Jet Cutters

## Equipment Specification

The following cutter selection tables have been included in this section to show the individual specifications of each cutter in addition to the recommended target pipe. In certain circumstances it may be feasible to use a tubing, casing, or drillpipe cutter for other sizes of target pipe, however caution must be applied as the incorrect selection may result in an incomplete cut.

### Jet Cutter Selection Tables

#### COILED TUBING CUTTERS

| Part Number | Explosive Weight (g) | Pressure Rating<br>1 hour at 400° F | Application                                  | Pipe Weight             | Pipe I.D.       |
|-------------|----------------------|-------------------------------------|----------------------------------------------|-------------------------|-----------------|
| 0687T001    | 2                    | 18,000 psi                          | 1" Coiled Tubing<br>0.080 – 0.109" wall      | 0.788 to 1.040<br>lb/ft | 0.840 – 0.782"  |
| 0800T001    | 3                    | 18,000 psi                          | 1-1/4" Coiled Tubing<br>0.156" wall          | 1.827 lb/ft             | 0.938"          |
| 0875T001    | 3                    | 18,000 psi                          | 1-1/4" Coiled Tubing<br>0.080" – 0.125" wall | 1.002 to 1.506<br>lb/ft | 1.090" – 1.000" |
| 1000T001    | 3                    | 18,000 psi                          | 1-1/2" Coiled Tubing<br>0.095" – 0.190" wall | 1.429 to 2.665<br>lb/ft | 1.310" – 1.120" |
| 1188T001    | 6.25                 | 18,000 psi                          | 1-3/4" Coiled Tubing<br>0.109" – 0.204" wall | 1.915 to 3.377<br>lb/ft | 1.532" – 1.342" |
| 1250T001    | 7                    | 18,000 psi                          | 1-3/4" Coiled Tubing<br>0.109" – 0.204" wall | 1.915 to 3.377<br>lb/ft | 1.532" – 1.342" |
| 1375T001    | 7                    | 18,000 psi                          | 2" Coiled Tubing<br>0.109" – 0.204" wall     | 2.207 to 3.923<br>lb/ft | 1.782" – 1.592" |

## STANDARD CUTTERS

| Part Number | Explosive Weight (g) | Pressure Rating<br>1 hour at 400° F | Application                  | Pipe Weight | Pipe I.D. |
|-------------|----------------------|-------------------------------------|------------------------------|-------------|-----------|
| 1580T001    | 12                   | 18,000 psi                          | 2-3/8" Tubing<br>0.218" wall | 5.01 lb/ft  | 1.939"    |
| 1580T101    | 38                   | 18,000 psi                          | 2-3/8" Tubing<br>0.218" wall | 5.01 lb/ft  | 1.939"    |
| 1680T001    | 12                   | 18,000 psi                          | 2-3/8" Tubing<br>0.218" wall | 5.01 lb/ft  | 1.939"    |
| 1813T001    | 12                   | 18,000 psi                          | 2-3/8" Tubing<br>0.218" wall | 5.01 lb/ft  | 1.939"    |
| 2063T001    | 17                   | 18,000 psi                          | 2-7/8" Tubing<br>0.276" wall | 7.90 lb/ft  | 2.323"    |
| 2125T001    | 17                   | 18,000 psi                          | 2-7/8" Tubing<br>0.276" wall | 7.90 lb/ft  | 2.323"    |
| 2125T101    | 38                   | 18,000 psi                          | 2-7/8" Tubing<br>0.276" wall | 7.90 lb/ft  | 2.323"    |
| 2250T001    | 22.7                 | 18,000 psi                          | 2-7/8" Tubing<br>0.276" wall | 7.90 lb/ft  | 2.323"    |
| 2250T101    | 38                   | 18,000 psi                          | 2-7/8" Tubing<br>0.276" wall | 7.90 lb/ft  | 2.323"    |
| 2500T001    | 22.7                 | 18,000 psi                          | 3-1/2" Tubing<br>0.289" wall | 10.20 lb/ft | 2.922"    |
| 2500T101    | 28.33                | 18,000 psi                          | 3-1/2" Tubing<br>0.375" wall | 12.95 lb/ft | 2.750"    |
| 2650T101    | 34                   | 18,000 psi                          | 3-1/2" Tubing<br>0.254" wall | 9.20 lb/ft  | 2.992"    |
| 2750T001    | 22.7                 | 18,000 psi                          | 3-1/2" Tubing<br>0.289" wall | 10.20 lb/ft | 2.922"    |
| 2750T101    | 38                   | 18,000 psi                          | 3-1/2" Tubing<br>0.289" wall | 10.20 lb/ft | 2.922"    |

| PREMIUM CUTTERS |                      |                                  |                               |             |           |
|-----------------|----------------------|----------------------------------|-------------------------------|-------------|-----------|
| Part Number     | Explosive Weight (g) | Pressure Rating 1 hour at 400° F | Application                   | Pipe Weight | Pipe I.D. |
| 1680T001 HNS    | 12                   | 18,000 psi                       | 2-3/8" Tubing 0.218" wall     | 5.01 lb/ft  | 1.939"    |
| 1900S001        | 20                   | 22,000 psi                       | 2-7/8" Tubing 0.340" wall     | 9.50 lb/ft  | 2.195"    |
| 2188T101        | 36                   | 22,000 psi                       | 3-1/8" Tubing 0.435" wall     | 12.50 lb/ft | 2.255"    |
|                 |                      |                                  | 3-1/2" Drillpipe 0.375" wall  | 12.95 lb/ft | 2.750"    |
| 2251T101        | 36                   | 20,000 psi                       | 3-1/2" Drillpipe 0.476" wall  | 15.80 lb/ft | 2.548"    |
| 2252T101        | 35                   | 20,000 psi                       | 3-1/2" Tubing 0.460" wall     | 14.93 lb/ft | 2.580"    |
| 2375T201        | 38                   | 18,000 psi                       | 3-1/2" Tubing 0.425" wall     | 13.96 lb/ft | 2.650"    |
| 2500T201        | 38                   | 18,000 psi                       | 3-1/2" Tubing 0.400" wall     | 13.24 lb/ft | 2.700"    |
|                 |                      |                                  | 3-1/2" Tubing 0.425" wall     | 13.96 lb/ft | 2.650"    |
| 2500T201 HNS    | 38                   | 18,000 psi                       | 3-1/2" Tubing 0.289" wall     | 10.20 lb/ft | 2.922"    |
| 2625T201 HNS    | 38                   | 18,000 psi                       | 3-1/2" Tubing 0.375" wall     | 12.95 lb/ft | 2.750"    |
| 2690T201        | 52                   | 18,000 psi                       | 4-1/2" Tubing 0.365" wall     | 16.12 lb/ft | 3.770"    |
| 2690T301        | 52                   | 18,000 psi                       | 4-1/2" Tubing 0.365" wall     | 16.12 lb/ft | 3.770"    |
| 3000T101        | 38                   | 22,000 psi                       | 4" Packer Mandrel 0.360" wall | 14.00 lb/ft | 3.280"    |
| 3190T201        | 59                   | 22,000 psi                       | 4" Packer Mandrel 0.360" wall | 14.00 lb/ft | 3.280"    |
| 3190T301        | 59                   | 22,000 psi                       | 4" Packer Mandrel 0.360" wall | 14.00 lb/ft | 3.280"    |
| 3250T201        | 59                   | 22,000 psi                       | 5" Tubing 0.362" wall         | 17.93 lb/ft | 4.276"    |
| 3250T301        | 59                   | 22,000 psi                       | 5" Tubing 0.362" wall         | 17.93 lb/ft | 4.276"    |
| 3310T201        | 59                   | 18,500 psi                       | 5" Tubing 0.362" wall         | 17.93 lb/ft | 4.276"    |
| 3310T301        | 59                   | 18,500 psi                       | 5" Tubing 0.362" wall         | 17.93 lb/ft | 4.276"    |
| 3375T201        | 59                   | 22,000 psi                       | 4-1/2" Tubing 0.410" wall     | 17.91 lb/ft | 3.680"    |
|                 |                      |                                  | 5-1/2" Tubing 0.420" wall     | 22.79 lb/ft | 4.660"    |
| 3375T301        | 59                   | 22,000 psi                       | 4-1/2" Tubing 0.410" wall     | 17.91 lb/ft | 3.680"    |
|                 |                      |                                  | 5-1/2" Tubing 0.420" wall     | 22.79 lb/ft | 4.660"    |



## PREMIUM CUTTERS

| Part Number | Explosive Weight (g) | Pressure Rating 1 hour at 400° F | Application                  | Pipe Weight | Pipe I.D. |
|-------------|----------------------|----------------------------------|------------------------------|-------------|-----------|
| 3475T201    | 59                   | 22,000 psi                       | 4-1/2" Tubing 0.410" wall    | 17.91 lb/ft | 3.680"    |
|             |                      |                                  | 5-1/2" Tubing 0.420" wall    | 22.79 lb/ft | 4.660"    |
| 3475T301    | 59                   | 22,000 psi                       | 4-1/2" Tubing 0.410" wall    | 17.91 lb/ft | 3.680"    |
|             |                      |                                  | 5-1/2" Tubing 0.420" wall    | 22.79 lb/ft | 4.660"    |
| 3680T201    | 59                   | 18,000 psi                       | 5" Drillpipe 0.362" wall     | 17.93 lb/ft | 4.267"    |
|             |                      |                                  | 5" Drillpipe 0.478" wall     | 23.08 lb/ft | 4.044"    |
| 3680T301    | 59                   | 18,000 psi                       | 5" Drillpipe 0.362" wall     | 17.93 lb/ft | 4.267"    |
|             |                      |                                  | 5" Drillpipe 0.478" wall     | 23.08 lb/ft | 4.044"    |
| 3800T301    | 76                   | 18,000 psi                       | 5" Drillpipe 0.476" wall     | 23.00 lb/ft | 4.048"    |
| 4070T201    | 109.33               | 22,000 psi                       | 5-5/8" Tubing 0.520" wall    | 26.70 lb/ft | 4.500"    |
| 4070T301    | 76                   | 22,000 psi                       | 5-1/2" Drillpipe 0.500" wall | 26.70 lb/ft | 4.500"    |
| 4150T201    | 109.33               | 18,000 psi                       | 5-1/2" Tubing 0.500" wall    | 26.70 lb/ft | 4.500"    |
| 4150T301    | 76                   | 18,000 psi                       | 5-1/2" Tubing 0.500" wall    | 26.70 lb/ft | 4.500"    |
| 4200T201    | 109.33               | 18,000 psi                       | 5-1/2" Tubing 0.500" wall    | 26.70 lb/ft | 4.500"    |
| 4200T301    | 76                   | 18,000 psi                       | 5-1/2" Drillpipe 0.500" wall | 26.70 lb/ft | 4.500"    |
| 5250T201    | 139                  | 18,000 psi                       | 7" Casing 0.500" wall        | 34.71 lb/ft | 6.000"    |
| 5250T301    | 97.6                 | 18,000 psi                       | 7" Casing 0.408" wall        | 29.00 lb/ft | 6.184"    |
| 5375T201    | 139                  | 18,000 psi                       | 7" Casing 0.500" wall        | 34.71 lb/ft | 6.000"    |
| 5375T301    | 97.6                 | 18,000 psi                       | 7" Casing 0.408" wall        | 29.00 lb/ft | 6.184"    |
| 5700T201    | 139                  | 18,000 psi                       | 7" Casing 0.500" wall        | 34.71 lb/ft | 6.000"    |
| 5700T301    | 97.6                 | 18,000 psi                       | 7" Casing 0.408" wall        | 29.00 lb/ft | 6.184"    |

### PLUG AND ABANDONMENT CUTTERS

| Part Number | Explosive Weight (g) | Pressure Rating 1 hour at 400° F | Application                   | Pipe Weight | Pipe I.D. |
|-------------|----------------------|----------------------------------|-------------------------------|-------------|-----------|
| 4250T301    | 76                   | 7,500 psi                        | 5-1/2" Casing<br>0.415" wall  | 23.00 lb/ft | 4.670"    |
| 5800T301    | 97.6                 | 7,500 psi                        | 7" Casing<br>0.540" wall      | 38.00 lb/ft | 5.920"    |
| 6250T301    | 97.6                 | 7,500 psi                        | 7" Casing,<br>0.317" wall     | 23.00 lb/ft | 6.366"    |
|             |                      |                                  | 7-5/8" Casing,<br>0.430" wall | 33.70 lb/ft | 6.765"    |

### GAS WELL LOW PRESSURE CUTTERS

| Part Number | Explosive Weight (g) | Pressure Rating 1 hour at 400° F | Application               | Pipe Weight | Pipe I.D. |
|-------------|----------------------|----------------------------------|---------------------------|-------------|-----------|
| 1680T001GW  | 5.9                  | 7,000 psi                        | 2-3/8" Tubing 0.218" wall | 5.01 lb/ft  | 1.939"    |
| 1813T001GW  | 6.6                  | 7,000 psi                        | 2-3/8" Tubing 0.218" wall | 5.01 lb/ft  | 1.939"    |
| 2125T001GW  | 10.3                 | 7,000 psi                        | 2-7/8" Tubing 0.276" wall | 7.90 lb/ft  | 2.323"    |
| 2250T001GW  | 12                   | 7,000 psi                        | 2-7/8" Tubing 0.276" wall | 7.90 lb/ft  | 2.323"    |

All cutters contain HMX unless stated (HNS) in the Part Number

Weights highlighted in **red** indicate a 1.1D shipping classification, these cannot be air freighted. All other cutters are 1.4D and can be air freighted

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