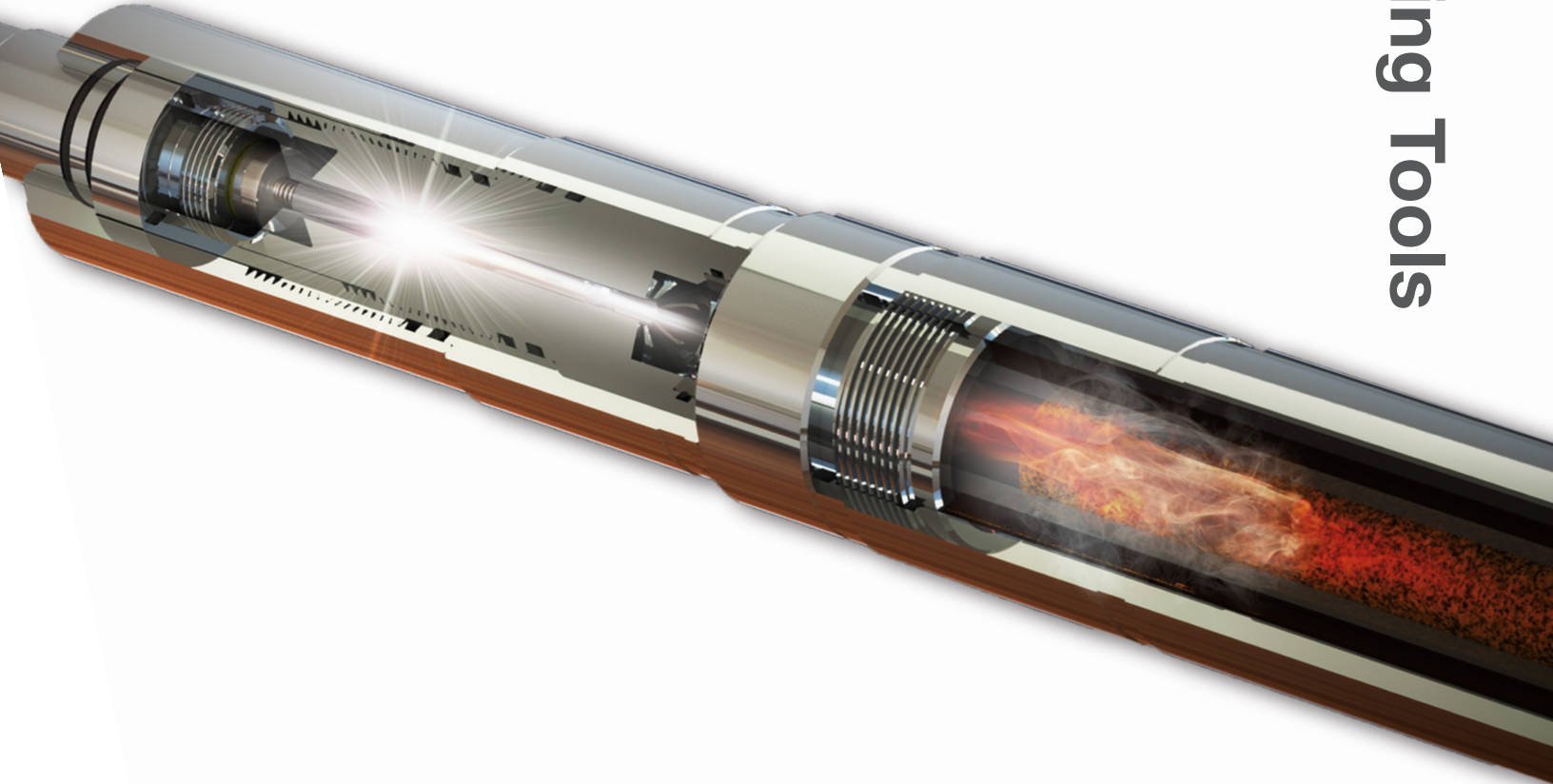


T-Set[®] Setting Tools



—
Setting tools for
every application
—

Size 05 – 10 – 20 T-Set®

www.hunting-intl.com/titan

The Size 05 – 10 – 20 T-Set series features a classic design that the oilfield has been familiar with for decades. Hunting has made many improvements to the original design, making it the most rugged and reliable setting tool in the oilfield today.

The ignition of a power charge creates high gas pressure inside the setting tool. The generated high pressure gas pushes a piston, which in turn drives hydraulic oil through a small orifice, initiating the setting sequence. Once the required setting force is achieved, a shear stud breaks releasing the T-Set from the plug/packer.

Features

- Case hardened pressure cylinders
- Black oxide coated components
- Options for bleeder valves

Benefits

- Greater surface hardness and increased abrasive wear from case hardening
- Black oxide coating improves corrosion and chemical resistance
- Bleeder valves provide a safer option to bleed off pressure inside the tool at surface



O.D. (in.)/[mm]	No. 05 1.71 [43]	No. 10 2.75 [70]	No. 10 Non-Ported 2.75 [70]	No. 10 Non-Ported High Pressure 3.20 [81]	No. 20 3.81 [97]	No. 20 Non-Ported 3.81 [97]	No. 20 Non-Ported High Pressure 4.12 [105]
Assembly Part Number	WST-BK05-001	WST-BK10-001	WST-BK10-201	WST-BK10-002	WST-BK20-001	WST-BK20-201	WST-BK20-002
Redress Kit Part Number	WST-BK05-010**	WST-BK10-010**	WST-BK10-010-ND**	WST-BK10-010-ND**	WST-BK20-010**	WST-BK20-010-ND**	WST-BK20-010**
Max. Temp (°F)/[°C]†	400 [204]	400 [204]	400 [204]	400 [204]	400 [204]	400 [204]	400 [204]
Max. Pressure (psi)/[MPa]	23,500 [162]	18,500 [128]	21,500 [148]	30,000 [207]	18,500 [128]	20,000 [138]	25,000 [172]
Length (ft)/[m]	6.02 [1.83]	5.32 [1.62]	5.32 [1.62]	5.32 [1.62]	6.24 [1.90]	6.24 [1.90]	6.24 [1.90]
Empty Weight (lbm)/[kg]	34 [15]	64 [29]	64 [29]	92 [42]	146 [66]	146 [66]	170 [77]
Stroke (in.)/[cm]	6.0 [15.2]	5.8 [14.7]	5.8 [14.7]	5.8 [14.7]	10.5 [26.67]	10.5 [26.67]	10.5 [26.67]
Max. Setting Force (lb)/[kN]	10,000 [44]	35,000 [156]	35,000 [156]	35,000 [156]	55,000 [245]	55,000 [245]	55,000 [245]
Fishing Strength (lb)/[kN]	43,900 [195]	139,500 [621]	139,500 [621]	139,500 [621]	184,500 [821]	184,500 [821]	184,500 [821]
Upper Head Connection	No. 05 Firing Head Pin	No. 10 Firing Head Box	No. 10 Firing Head Box	No. 10 Firing Head Box	No. 20 Firing Head Box	No. 20 Firing Head Box	No. 20 Firing Head Box

† Hardware only. Viton O-rings need to be used above 325°F (163°C)

** Use "HT" for high temperature operations (above 325°F (163°C))

Compact Single Stage T-Set®

www.hunting-intl.com/titan

The compact, single stage T-Set is the shortest setting tool in the T-Set family. Its low weight and short length make it ideal for stage frac jobs requiring pump down operations.

The top cylinder is filled with oil and self-bleeds with increased temperature. The trouble-free design makes it quick and easy to redress at the wellsite providing fast turnaround times.

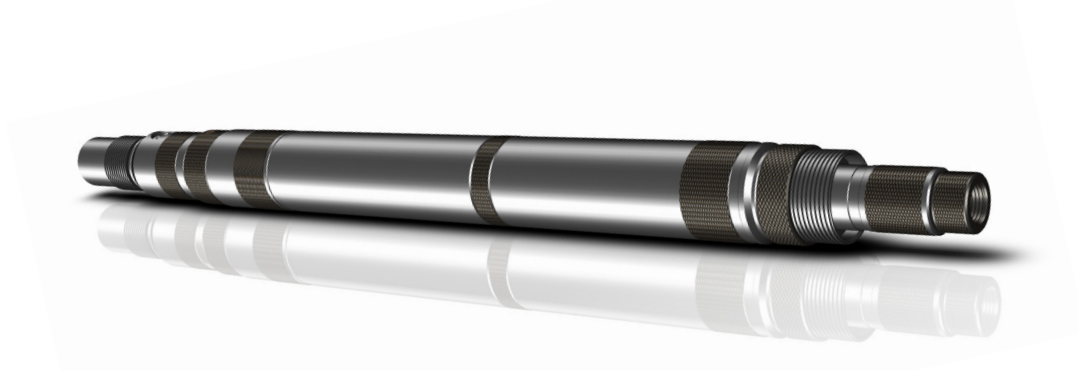
The ignition of a slow set power charge creates gas pressure inside the setting tool. The gas migrates through the piston initiating the setting sequence. The hydraulic oil slowly bleeds out of the tool providing a cushioning effect while setting. Once the required setting force is achieved, a shear stud breaks releasing the T-Set from the plug/packer.

Features

- Short compact design
- Self-bleeding compensating system
- Options for bleeder valves
- Black oxide coated components

Benefits

- Ideal for horizontal pump down operations
- Compensation oil level adjustments are not necessary
- Bleeder valves provide a safer option to bleed off pressure inside the tool at surface
- Black oxide coating improves corrosion and chemical resistance



O.D. (in.)[mm]	1.50 [38]	1.71 [43]	2.50 [64] Self Bleeding	2.50 [64] Manual Bleeding	3.50 [89] Self Bleeding	3.63 [92] High Pressure
Assembly Part Number	WST-1500-001	WST-1718-001	WST-2500-001	WST-2500-002	WST-5321-501	WST-3625-501
Redress Kit Part Number	WST-1500-010**	WST-1718-001**	WST-2500-010**	WST-2500-010**	WST-5321-110**	WST-3625-110**
Max. Temp (°F)[°C]†	400 [204]	400 [204]	400 [204]	400 [204]	400 [204]	400 [204]
Max. Pressure (psi)[MPa]	20,000 [138]‡	20,000 [138]‡	20,000 [138]	20,000 [138]	15,000 [103]	16,000 [110]
Length (ft)[m]	4.66 [1.42]	4.24 [1.29]	4.98 [1.52]	4.98 [1.52]	4.45 [1.36]	3.52 [1.07]
Empty Weight (lbm)[kg]	17 [8]	21 [10]	51 [23]	51 [23]	94 [43]	76 [34]
Stroke (in.)[cm]	6.4 [16.3]	6.4 [16.3]	10.5 [26.7]	10.5 [26.7]	9.6 [24.4]	10.0 [25.4]
Max. Setting Force (lbf)[kN]	10,000 [44]	13,000 [59]	30,000 [133]	30,000 [133]	55,000 [245]	55,000 [245]
Fishing Strength (lbf)[kN]	19,500 [87]	30,750 [137]	64,500 [287]	64,500 [287]	172,400 [767]	164,300 [731]
Upper Head Connection	1-3/16 in. - 12 "GO" Box	1-3/16 in. - 12 "GO" Box	1-3/16 in. - 12 "GO" Box	1-3/16 in. - 12 "GO" Box	3-1/8 in. O.D. "GO" Quick-Change Assy	3-1/8 in. O.D. "GO" Quick-Change Assy

† Hardware only. Viton O-rings need to be used above 325°F (163°C)

‡ No bleeder valve. Assembly with bleeder valve rated to 15,000 psi (103 MPa)

** Use "HT" for high temperature operations (above 325°F (163°C))

Multi-Stage T-Set®

www.hunting-intl.com/titan

The Multi-Stage T-Set offers the capability to set plugs and packers requiring long setting strokes and higher forces necessary for tubing patches.

The design concept of the Multi-Stage T-Set is the same as the Compact Single Stage T-Set. A self-bleeding compensation system allows for quick oil filling without the need for oil level gauges.

A larger slow set power charge is used to compensate for the extra piston movement required for longer strokes. Once ignited, the generated high pressure gas migrates through the upper and lower pistons initiating the setting sequence. Like the Compact Single Stage T-Set, the hydraulic oil slowly bleeds out of the tool providing a cushioning effect. Once the required setting force is achieved, a shear stud breaks releasing the T-Set from the plug/packer.

Features

- Long stroke
- Higher forces necessary for tubing patches
- Self-bleeding compensating system
- Options for bleeder valves
- Black oxide coated components

Benefits

- Ideal for plugs and packers requiring a long stroke
- Compensation oil level adjustments are not necessary
- Bleeder valves provide a safe option to bleed off pressure inside the tool at surface
- Black oxide coating improves corrosion and chemical resistance



O.D. (in.)[mm]	1.71 [43]	2.13 [54]	3.25 [83]	4.50 [114]
Assembly Part Number	WST-1718-101	WST-2125-101	WST-3250-001	WST-4500-001
Redress Kit Part Number	WST-1718-110**	WST-2125-110**	WST-3250-010**	WST-4500-010**
Max. Temp (°F)[°C]†	400 [204]	400 [204]	400 [204]	250 [121]
Max. Pressure (psi)[MPa]	20,000 [138]‡	15,000 [103]‡	15,000 [103]	15,000 [103]
Length (ft)[m]	7.70 [2.35]	7.27 [2.22]	10.23 [3.12]	12.88 [3.93]
Empty Weight (lbm)[kg]	36 [16]	53 [24]	178 [801]	433 [196]
Stroke (in.)[cm]	10.5 [26.7]	10.4 [26.4]	14.9 [37.8]	20.0 [50.8]
Max. Setting Force (lbf)[kN]	20,000 [89]	35,000 [155]	72,000 [320]	95,000 [423]
Fishing Strength (lbf)[kN]	25,000 [111]	52,000 [231]	120,000 [534]	194,000 [863]
Upper Head Connection	1-3/16 in. - 12 "GO" Box	1-3/16 in. - 12 "GO" Box	3-1/8 in. O.D. "GO" Quick-Change Assembly	3-1/8 in. O.D. "GO" Quick-Change Assembly

† Hardware only. Viton O-rings need to be used above 325°F (163°C)

‡ No bleeder valve. Assembly with bleeder valve rated to 20,000 psi (138 MPa)

** Use "HT" for high temperature operations (above 325°F (163°C))

T-Set® Firing Heads and Igniters

T-Set Size (in.)/[mm]	Assembly Part Number†	Contact Kit Part Number	Igniter Type	Igniter Part Numbers	Upper Head Connection
No. 5	2005-000-000	2005-000-002	BP Style	BOT-H437440001	1-3/16 in.-12 GO Box
	2010-000-000	2010-000-002	BP Style	BOT-H437440001	1-3/16 in.-12 GO Box
	2010-000-020	2010-000-022	BP Style	BOT-H437440001	3-1/8 in. O.D. GO Quick-Change Assembly
	2010-000-040	2010-000-022	BP Style	BOT-H437440001	2-3/4 in. O.D. GO Quick-Change Assembly
No. 10	2010-000-070	2010-000-072	BP Style	BOT-H437440001	3-1/8 in. O.D. SIE Quick-Change Assembly
	2010-000-100	-	GO	DET-2700-0742-DB	3-1/8 in. O.D. GO Quick-Change Assembly
	2010-000-105	-	RED	DETO-RED GO IGN	3-1/8 in. O.D. GO Quick-Change Assembly
	2010-000-111	-	GO	DET-2700-0742-DB	3-1/8 in. O.D. SIE Quick-Change Assembly
	2010-000-115	-	RED	DETO-RED GO IGN	3-1/8 in. O.D. SIE Quick-Change Assembly
	2020-000-000	2020-000-002	BP Style	BOT-H437440001	1-3/16 in.-12 GO Box
	2020-000-020	2020-000-022	BP Style	BOT-H437440001	3-1/8 in. O.D. GO Quick-Change Assembly
	2020-000-070	2020-000-072	BP Style	BOT-H437440001	3-1/8 in. O.D. SIE Quick-Change Assembly
No. 20	2020-000-100	-	GO	DET-2700-0742-DB	3-1/8 in. O.D. GO Quick-Change Assembly
	2020-000-105	-	RED	DETO-RED GO IGN	3-1/8 in. O.D. GO Quick-Change Assembly
	2020-000-111	-	GO	DET-2700-0742-DB	3-1/8 in. O.D. SIE Quick-Change Assembly
	2020-000-115	-	RED	DETO-RED GO IGN	3-1/8 in. O.D. SIE Quick-Change Assembly
1.50 [38] 1.71 [43] 2.13 [54] 2.50 [64]	6110-000-000	6110-000-002	GO	DET-2700-0742-DB	1-3/16 in.-12 GO Box
3.50 [89]	6035-000-111	-	GO	DET-2700-0742-DB	3-1/8 in. O.D. SIE Quick-Change Assembly
	6035-000-115	-	RED	DETO-RED GO IGN	3-1/8 in. O.D. SIE Quick-Change Assembly
3.63 [92]	WST-3625-115	-	RED	DETO-RED GO IGN	3-1/8 in. O.D. SIE Quick-Change Assembly

† All firing heads rated to 400°F (204°C), 20,000 psi (138 MPa), 600 VDC and 2,000 mA. Viton O-rings need to be used above 325°F (163°C).



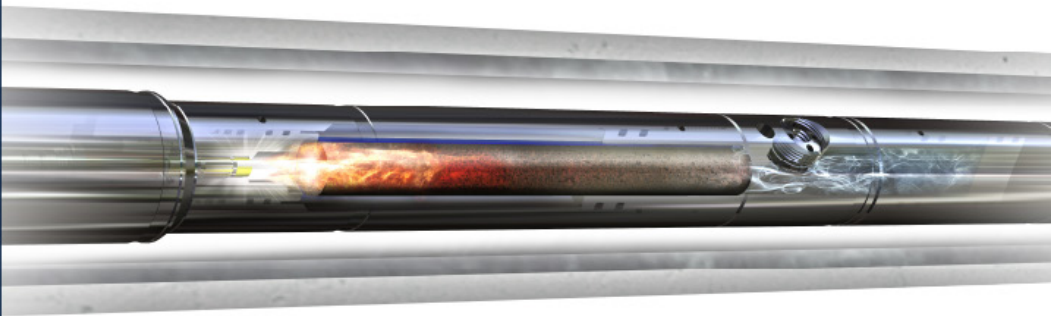
Plug Shoot Cartridge Firing Head

Part Number	Description	Specifications				Add. Components	
		Outside Diameter (in)/[mm]	Overall Length (in)/[cm]	Shoulder Length (in)/[cm]	Weight (lb)/[kg]	Igniter Holder	Plug Shoot Cartridge
2020-312-200	3-1/8" Plug Shoot Cartridge Firing Head Assembly for #20 TSET	3.38 [86]	15.03 [38.18]	11.06 [28.09]	24.3	HTS-PSA-022	HTS-PSC-000
2020-337-200	3-3/8" Plug Shoot Cartridge Firing Head Assembly for #20 TSET	3.38 [86]	15.03 [38.18]	11.06 [28.09]	24.3	HTS-PSA-022	HTS-PSC-000
2010-275-200	2-3/4" Plug Shoot Cartridge Firing Head Assembly for #10 TSET	2.75 [70]	15.22 [38.66]	11.50 [29.21]	15.2	HTS-PSA-012	HTS-PSC-000
2010-312-200	3-1/8" Plug Shoot Cartridge Firing Head Assembly for #10 TSET	3.13 [79]	14.95 [37.97]	11.23 [28.52]	18.7	HTS-PSA-012	HTS-PSC-000



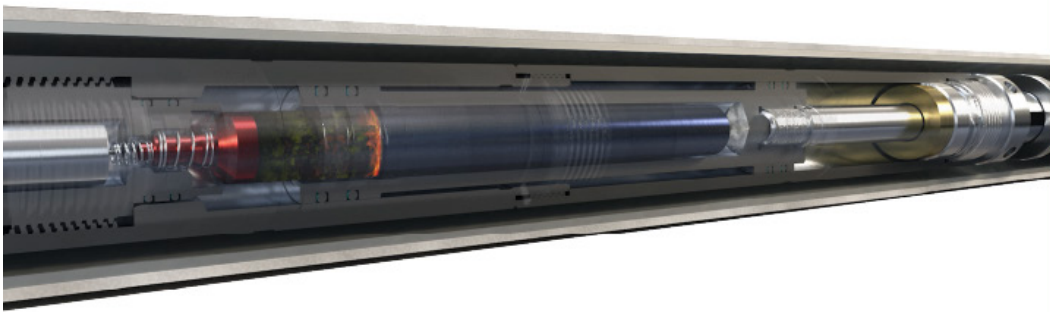
Plug Shoot Cartridge Firing Head

PowerSet®
—
Manufactured
in-house for
reliable setting
times



PowerSet

Hunting's original power charge. PowerSet is available in all commonly used sizes and, like all of the PowerSet line, is manufactured in-house for reliable setting times, technical support, and supply chain management.

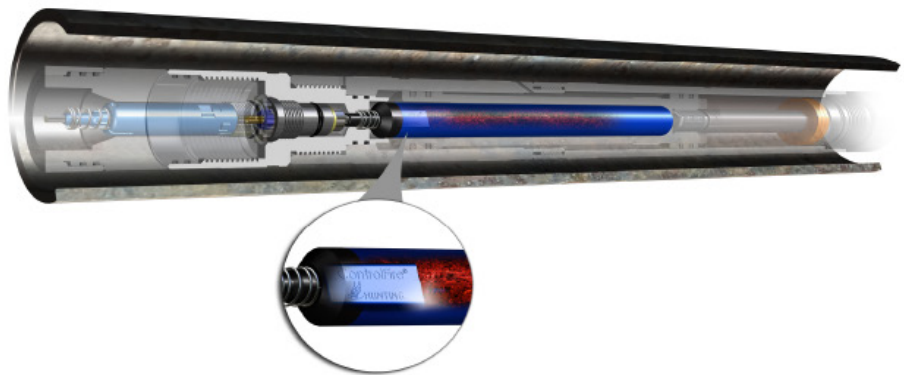


**PowerSet®
Solo**
—
The first
igniterless
power charge

PowerSet Solo

PowerSet Solo is the world's first igniterless power charge. PowerSet Solo uses a built-in initiator, eliminating the need for a separate igniter. It is available in #10 and #20 sizes and compatible with existing T-Set #10/#20 firing heads and setting tools.

**PowerSet
Recon™**
—
Igniterless
and
Addressable



PowerSet Recon™

Hunting's PowerSet Recon is the first and only addressable and igniterless power charge. PowerSet Recon utilizes embedded ControlFire Recon™ switch technology allowing the user to address the power charge down hole using ControlFire® software and on surface with the VeriFire® Panel. By eliminating both the plug switch and igniter, PowerSet Recon can lower stage costs while adding power charge detection technology. PowerSet Recon is available in sizes #10 and #20.

T-Set Compatible Power Charges

Setting Tool Type	Setting Tool Part Number	Power Charge Type	Power Charge Part No.
1.50 [38] Compact	WST-1500-001	Slow Set Charge	HDO-1500-100
1.71 [43] Compact	WST-1718-001	Slow Set Charge	HDO-1500-100
2.50 [64] Compact	WST-2500-001	Slow Set Charge	HDO-2500-200
1.71 [43] Multi-Stage	WST-1718-101	Slow Set Charge	HDO-1687-100
2.13 [54] Multi-Stage	WST-2125-101	Slow Set Charge	HDO-3625-100
3.25 [83] Multi-Stage	WST-3250-001	Slow Set Charge	OPC-3250-000-MS
4.50 [114] Multi-Stage	WST-4500-001	Slow Set Charge	JES-0450-140
T-Set # 5**	WST-BK05-001	Standard	BOT-H437641500
			DB-BPC-0800-005S
T-Set One	TSET-ONE-000	PowerSet #10F (Fast-burn)	HPC-0010-412
		PowerSet #10	HPC-0010-411
T-Set # 10	WST-BK10-001	PowerSet Solo #10	HPC-0010-431
		PowerSet Recon #10	HPC-0010-441
		PowerSet #20	HPC-0020-511
T-Set # 20	WST-BK20-001	PowerSet Solo #20	HPC-0020-531
		PowerSet Recon #20	HPC-0020-541
T-Set 3-1/2" Shorty	WST-5321-501	PowerSet 3-1/2"	HPC-3500-711
T-Set 3-5/8" Compact	WST-3625-501	PowerSet 3-5/8"	HPC-3625-511

**Secondary igniter required (P/N: DET-2700-076)

T-Set Adapters

T-Set Size (in.)[mm]	Assembly Part Number	Compatible Adapters
1.71 [43]	6110-TCP-001	1-3/16" FH Box thread to 1-11/16" T-Set
	WST-1500-010	1-1/2" T-Set to 1 11/16" Setting Equipment
2.50 [64]	WST-2500-120M	2-3/4" 6 ACME TCP FH Pin to 2-1/2" T-Set
	WST-2500-040	2-1/2" T-Set to #10 Setting Equipment
3.50 [89]	WST-5321-023M	2-3/4" 6 ACME TCP FH Pin to 3-1/2" T-Set
	WST-5321-132	#10 FH Box to 3-1/2" T-Set Top Sub
	WST-5321-232	#20 FH Box to 3-1/2" T-Set Top Sub
	WST-5303-117	3-1/2" T-Set to #10 Setting Equipment
	WST-5303-120	3-1/2" T-Set to #20 Setting Equipment
	WST-3625-120M	2-3/4" 6 ACME TCP FH Pin to 3-5/8" T-Set
3.63 [92]	WST-3625-132	#10 FH Box to 3-5/8" T-Set
	WST-3625-133	#20 FH Box to 3-5/8" T-Set
	WST-5303-117	3-5/8" T-Set to #10 Setting Equipment
	WST-5303-120	3-5/8" T-Set to #20 Setting Equipment
Size 10	2010-000-101M	2-3/4" 6 ACME TCP FH Pin to T-Set #10
Size 20	2020-000-101-MOD	2-3/4" 6 ACME TCP FH Pin to T-Set #20

Note: Cross over adapters do not change the function of the setting tool. Setting tool and adapter must be checked against plug setting kit to make sure the plug setting kit will accommodate the full stroke of the setting tool. Incompatible setting equipment can result in damaged parts.

T-Set® Bleeder Valve and Wrench Assemblies

T-Set Size (in.)[mm]	Stem Type		Puncture Disc Type			
	Bleeder Wrench Part Number	Bleeder Valve Assembly	Bleeder Wrench Part Number	Bleeder Assembly	Redress Kit Part Number	Torque Socket Assembly
1.5 [38]	WST-2125-146	WST-2125-142	WST-2125-340	WST-BK05-138		
1.71 [43]						
2.13 [54]						
#5	WST-5125-146	WST-5125-142	WST-3625-140	WST-3625-135	WST-3625-138	WST-3625-240A
3.25 [83]						
3.63 [92]						
4.5 [114]						
#10						
#20						

Products and Services

- ▶ Hunting's mission is to innovate and manufacture quality oil/gas extraction equipment and distribute it across our global supply chain.
- ▶ Hunting's energetics division produces the greatest number of shaped charges in the world.
- ▶ Hunting's instrument division produces the most widely used addressable switch in the world.

Proprietary Technology

Hunting develops innovative technology that improves the way oil and gas are extracted, with a full range of applications below the wellhead including mud motors, premium connections, well perforating, logging and intervention tools.

Geographic Footprint

Manufacturing and distribution locations are strategically located in the key energy producing regions of the world.



Global Business Units

OCTG and Connection Technology

Perforating Systems & Instrumentation

Advanced Manufacturing

Drilling Tools

Well Intervention

Subsea Technologies

Further Information

Web

www.hunting-intl.com

Email

sales.titan@hunting-intl.com
support.titan@hunting-intl.com

Global Headquarters

Hunting Energy Services Inc.

16825 Northchase Drive, Suite 600
Houston, Texas 77060-3236
USA

T. +1 281 442 7382



'Excellence in **Energy Services** for over 100 years'

© Hunting