

TOOLS



HYDRAULIC & MECHANICAL TOOLS



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TORQUE WRENCH

Square Drive Predator Series

MAX TORQUE 33496 Nm 700 bar
24,705 Ft-Lb 10,152 PSI

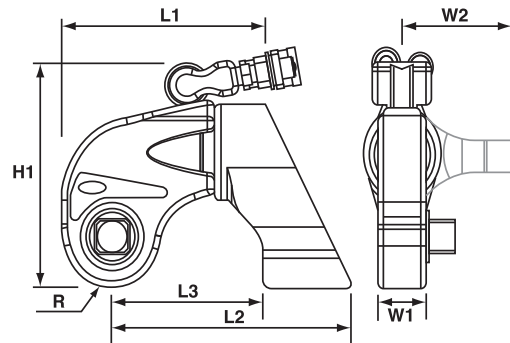


360° SWIVEL



PREDATOR SERIES SQUARE DRIVE TORQUE WRENCHES

- Low Weight, High Strength Design
- Superior Torsional Strength
- Fast Operation Cycle
- Fine Tooth Pawl
- Floating Piston Design
- Internal Swivel Manifold Relief
- Rigid Steel Body Construction
- Compact Frame Size



- Push Button Reversal of Square Drive
- Corrosion Resistant Finish
- 360° Reaction Arm
- Push to Click Reaction Arms
- Multi-Axis High Flow Swivel Manifold
- Simple Design
- Consistent Torque Output
- Fully Enclosed Drive Mechanism
- Accurate Torque Output
- Marathon Lifetime Warranty

Tool Model	L1		L2		L3		H1		R		W1		W2	
	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
TWSD1	5.5	139	6.7	170	4.4	112	5.7	145	1.1	28	1.3	33	3.4	86
TWSD3	6.7	170	7.7	196	4.9	124	6.9	175	1.5	38	1.8	46	4.1	104
TWSD6	7.7	196	9.3	236	5.6	142	8.1	206	1.8	46	2.0	51	5.4	137
TWSD11	9.2	234	11.5	292	7.0	178	9.5	241	2.2	56	2.4	61	6.5	165
TWSD25	12.0	305	14.8	376	9.1	231	12.4	315	2.8	71	3.0	76	7.9	200



Tool Model	Square Drive		Max. Torque		Tool Weight	
	(in.)	(mm)	(ft. lbs.)	(Nm)	(lbs.)	(kg)
TWSD1	3/4	19.0	1,390	1800	5.1	2.3
TWSD3	1	25.4	3,070	4160	9.9	4.5
TWSD6	1 1/2	38.1	6,020	8157	17.4	7.9
TWSD11	1 1/2	38.1	10,940	14823	28.9	13.1
TWSD25	2 1/2	63.5	24,700	33496	65.0	29.5

SQUARE DRIVE HEX DRIVES AND SOCKETS

Torque Wrench	Hexagon Drive Size A/F (in.)	Part No.	Hexagon Drive Size A/F (mm)	Part No.
TWSD1	0.63	TWD1-063	17mm	TWD1-017
	0.75	TWD1-075	19mm	TWD1-019
	0.88	TWD1-088	22mm	TWD1-022
	1.00	TWD1-100	24mm	TWD1-024
	-	-	27mm	TWD1-027
TWSD3	0.63	TWD3-063	17mm	TWD3-017
	0.75	TWD3-075	19mm	TWD3-019
	0.88	TWD3-088	22mm	TWD3-022
	1.00	TWD3-100	24mm	TWD3-024
	1.13	TWD3-113	27mm	TWD3-027
	1.25	TWD3-125	30mm	TWD3-030
	1.38	TWD3-138	32mm	TWD3-032
TWSD6	0.88	TWD6-088	22mm	TWD6-022
	1.00	TWD6-100	24mm	TWD6-024
	1.13	TWD6-113	27mm	TWD6-027
	1.25	TWD6-125	30mm	TWD6-030
	1.38	TWD6-138	32mm	TWD6-032
	1.50	TWD6-150	36mm	TWD6-036
TWSD11	1.63	TWD6-163	41mm	TWD6-041
	1.13	TWD11-113	27mm	TWD11-027
	1.25	TWD11-125	30mm	TWD11-030
	1.38	TWD11-138	32mm	TWD11-032
	1.50	TWD11-150	36mm	TWD11-036
	1.63	TWD11-163	41mm	TWD11-041
TWSD25	1.75	TWD11-175	46mm	TWD11-046
	1.50	TWD25-150	36mm	TWD25-036
	1.63	TWD25-163	41mm	TWD25-041
	1.75	TWD25-175	46mm	TWD25-046
	1.88	TWD25-188	50mm	TWD25-050
	2.00	TWD25-200	55mm	TWD25-055
	2.25	TWD25-225	60mm	TWD25-060
	2.50	TWD25-250	65mm	TWD25-065
	2.75	TWD25-275	70mm	TWD25-070



Socket Size in.	3/4" Drive Part No.	1" Drive Part No.	1-1/2" Drive Part No.	2-1/2" Drive Part No.	Socket Size mm	3/4" Drive Part No.	1" Drive Part No.	1-1/2" Drive Part No.	2-1/2" Drive Part No.
7/8	TWSIA088	TWSIB088	-	-	22	TWSMA022	TWSMB022	-	-
1-1/16	TWSIA106	TWSIB106	-	-	24	TWSMA024	TWSMB024	-	-
1-1/4	TWSIA125	TWSIB125	-	-	32	TWSMA032	TWSMB032	-	-
1-3/8	TWSIA138	TWSIB138	-	-	36	TWSMA036	TWSMB036	-	-
1-7/16	TWSIA144	TWSIB144	-	-	41	TWSMA041	TWSMB041	TWSMC041	-
1-5/8	TWSIA163	TWSIB163	TWSIC163	-	46	TWSMA046	TWSMB046	-	-
1-13/16	TWSIA181	TWSIB181	-	-	50	TWSMA050	TWSMB050	-	-
2	TWSIA200	TWSIB200	TWSIC200	-	55	-	TWSMB055	-	-
2-3/16	TWSIA219	TWSIB219	TWSIC219	-	60	-	TWSMB060	TWSMC060	-
2-3/8	TWSIA238	TWSIB238	TWSIC238	-	65	-	TWSMB065	TWSMC065	-
2-9/16	-	TWSIB256	TWSIC256	-	70	-	TWSMB070	TWSMC070	-
2-3/4	-	TWSIB275	TWSIC275	-	75	-	-	TWSMC075	-
2-15/16	-	TWSIB294	TWSIC294	-	80	-	TWSMB080	TWSMC080	TWSMF080
3-1/8	-	TWSIB313	TWSIC313	TWSIF313	85	-	TWSMB085	TWSMC085	TWSMF085
3-3/8	-	TWSIB338	TWSIC338	TWSIF338	90	-	TWSMB090	TWSMC090	TWSMF090
3-1/2	-	TWSIB350	TWSIC350	TWSIF350	95	-	TWSMB095	TWSMC095	TWSMF095
3-3/4	-	TWSIB375	TWSIC375	TWSIF375	100	-	TWSMB100	-	TWSMF100
3-7/8	-	TWSIB388	-	TWSIF388	110	-	TWSMB110	TWSMC110	TWSMF110
4-1/8	-	TWSIB413	TWSIC413	TWSIF413	115	-	-	TWSMC115	TWSMF115
4-1/4	-	TWSIB425	TWSIC425	TWSIF425	120	-	-	TWSMC120	-
4-5/8	-	-	TWSIC463	TWSIF463	135	-	-	-	TWSMF135
5	-	-	-	TWSIF500	150	-	-	-	TWSMF150
5-3/8	-	-	-	TWSIF538					
5-3/4	-	-	-	TWSIF575					
6-1/8	-	-	-	TWSIF613					

HYDRAULIC TOOLS



TORQUE WRENCH

Low Clearance Predator Series

MAX TORQUE 39,024 Nm 700 bar
28,782 Ft-Lb 10,000 PSI

THE LIGHTWEIGHT, HEAVY-DUTY TOOL FEATURES A LONG NECK, SHORT HEIGHT, AND SMALL RADIUS FOR INACCESSIBLE BOLTING AREAS FOUND IN INDUSTRY.

- Low Weight, High Strength Design
- Superior Torsional Strength
- Fast Operation Cycle
- Fine Tooth Pawl
- Floating Piston Design
- Auto-Connect Drive Piston
- Compact Frame Size
- Rigid Steel Body Construction
- Internal swivel manifold Relief
- Built-in Reaction Pad

PREDATOR LOW CLEARANCE TORQUE WRENCHES

The TWLC Predator Series Wrench was designed for the most inaccessible bolting areas found in industry. Its long neck, short height and small radius have all added to its great success

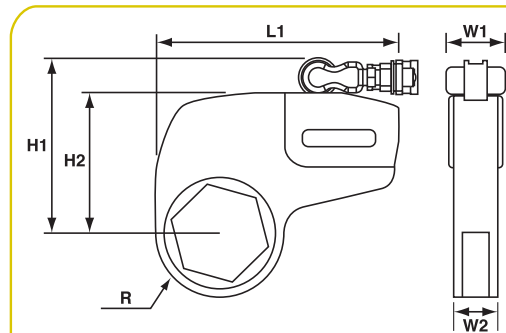


- Small Nose Radius
- Tool Free Link Change
- Corrosion Resistant Finish
- Multi-Axis High Flow Swivel Manifold
- Simple Design
- Consistent Torque Output
- Marathon Lifetime Warranty

* Links sold separately.
Tool is not shipped with link.

HOSES – DUAL LINE

TWH15	15', 1/4" ID non-conductive 4.6m, 9.5mm ID non-conductive
TWH20	20', 1/4" ID non-conductive 6m, 9.5mm ID non-conductive
TWH50	50', 1/4" ID non-conductive 15.2m, 9.5mm ID non-conductive



Tool Model	L1		H1		H2		R		W1		W2	
	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
TWLC2	7.6	193	5.4	137	4.1	104	1 ¹ / ₄ -1 ⁷ / ₈	32-48	1.7	43	1.3	33
TWLC4	8.8	223	6.4	163	5.1	130	1 ¹ / ₂ -1 ⁷ / ₈	38-47	2.0	51	1.7	43
TWLC8	10.4	264	7.7	196	6.2	158	2-2 ⁷ / ₈	51-74	2.7	69	2.1	53
TWLC15	12.0	305	8.8	224	7.3	185	2 ³ / ₈ -2 ¹ / ₂	60-64	3.1	79	2.5	64
TWLC30	15.4	391	10.9	277	9.4	239	3-4 ¹ / ₂	76-114	4.2	107	3.2	81

Tool Model	Hex Range		Max. Torque		Tool Weight	
	(in.)	(mm)	(ft.)	(Nm)	(lbs)	(kg)
TWLC2	1 ¹ / ₄ -2 ³ / ₈	32 - 60	1,575	2,135	6.2	2.8
TWLC4	1 ¹ / ₂ -3 ¹ / ₈	38.1 - 79	3,975	5,389	12.6	5.7
TWLC8	2 ³ / ₈ -3 ⁷ / ₈	60 - 98	7,950	10,770	22.9	10.3
TWLC15	2 ⁹ / ₁₆ -4 ⁵ / ₈	65 - 117	14,850	20,133	37.3	16.9
TWLC30	3 ¹ / ₈ -6 ¹ / ₈	79 - 155	28,800	39,047	77.0	34.9





Tool	Link Part No.	Nut A/F		Reducer			Reducer			Reducer		
		in.	mm	in.	mm	Part No.	in.	mm	Part No.	in.	mm	Part No.
TWLC2	TWL2-032	1.25	32	-	-	-	-	-	-	-	-	-
	TWL2-036	1.44	36	-	-	-	-	-	-	-	-	-
	TWL2-041	1.63	41	1.63-1.44	41-36mm	TWR2-041036	1.63-1.25	41-32mm	TWR2-041032	-	-	-
	TWL2-046	1.81	46	1.81-1.63	46-41mm	TWR2-046041	1.81-1.44	46-36mm	TWR2-046036	1.81-1.25	46-32mm	TWR2-046032
	TWL2-050	2.00	50	2.00-1.81	50-46mm	TWR2-050046	2.00-1.63	50-41mm	TWR2-050041	2.00-1.44	50-36mm	TWR2-050036
	TWL2-055	2.19	55	2.19-2.00	55-50mm	TWR2-055050	2.19-1.81	55-46mm	TWR2-055046	2.19-1.63	55-41mm	TWR2-055041
	TWL2-060	2.38	60	2.38-2.19	60-55mm	TWR2-060055	2.38-2.00	60-50mm	TWR2-060050	2.38-1.81	60-46mm	TWR2-060046
TWLC4	TWL4-041	1.63	41	1.63-1.44	41-36mm	TWR4-041036	1.63-1.25	41-32mm	TWR4-041032	-	-	-
	TWL4-046	1.81	46	1.81-1.63	46-41mm	TWR4-046041	1.81-1.44	46-36mm	TWR4-046036	1.81-1.25	46-32mm	TWR4-046032
	TWL4-050	2.00	50	2.00-1.81	50-46mm	TWR4-050046	2.00-1.63	50-41mm	TWR4-050041	2.00-1.44	50-36mm	TWR4-050036
	TWL4-055	2.19	55	2.19-2.00	55-50mm	TWR4-055050	2.19-1.81	55-46mm	TWR4-055046	2.19-1.63	55-41mm	TWR4-055041
	TWL4-060	2.38	60	2.38-2.19	60-55mm	TWR4-060055	2.38-2.00	60-50mm	TWR4-060050	2.38-1.81	60-46mm	TWR4-060046
	TWL4-065	2.56	65	2.56-2.38	65-60mm	TWR4-065060	2.56-2.19	65-55mm	TWR4-065055	2.56-2.00	65-50mm	TWR4-065050
	TWL4-070	2.75	70	2.75-2.56	70-65mm	TWR4-070065	2.75-2.38	70-60mm	TWR4-070060	2.75-2.19	70-55mm	TWR4-070055
	TWL4-075	2.94	75	2.94-2.75	75-70mm	TWR4-075070	2.94-2.56	75-65mm	TWR4-075065	2.94-2.38	75-60mm	TWR4-075060
	TWL4-080	3.13	80	3.13-2.94	80-75mm	TWR4-080075	3.13-2.75	80-70mm	TWR4-080070	3.13-2.56	80-65mm	TWR4-080065
TWLC8	TWL8-060	2.38	60	2.38-2.19	60-55mm	TWR8-060055	2.38-2.00	60-50mm	TWR8-060050	2.38-1.81	60-46mm	TWR8-060046
	TWL8-065	2.56	65	2.56-2.38	65-60mm	TWR8-065060	2.56-2.19	65-55mm	TWR8-065055	2.56-2.00	65-50mm	TWR8-065050
	TWL8-070	2.75	70	2.75-2.56	70-65mm	TWR8-070065	2.75-2.38	70-60mm	TWR8-070060	2.75-2.19	70-55mm	TWR8-070055
	TWL8-075	2.94	75	2.94-2.75	75-70mm	TWR8-075070	2.94-2.56	75-65mm	TWR8-075065	2.94-2.38	75-60mm	TWR8-075060
	TWL8-080	3.13	80	3.13-2.94	80-75mm	TWR8-080075	3.13-2.75	80-70mm	TWR8-080070	3.13-2.56	80-65mm	TWR8-080065
	TWL8-085	3.38	85	3.38-3.13	85-80mm	TWR8-085080	3.38-2.94	85-65mm	TWR8-085065	3.38-2.75	85-70mm	TWR8-085070
	TWL8-090	3.50	90	3.50-3.38	90-85mm	TWR8-090085	3.50-3.13	90-80mm	TWR8-090080	3.50-2.94	90-75mm	TWR8-090075
	TWL8-095	3.75	95	3.75-3.50	95-90mm	TWR8-095090	3.75-3.38	95-85mm	TWR8-095085	3.75-3.13	95-80mm	TWR8-095080
	TWL8-100	3.88	100	3.88-3.75	100-95mm	TWR8-100095	3.88-3.50	100-90mm	TWR8-100090	3.88-3.38	100-85mm	TWR8-100085
	TWL8-105	-	105	-	105-100mm	TWR15-105100	-	105-95mm	TWR15-105095	-	105-90mm	TWR15-105090
TWLC15	TWL15-070	2.75	70	2.75-2.56	70-65mm	TWR15-070065	2.75-2.38	70-60mm	TWR15-070060	2.75-2.19	70-55mm	TWR15-070055
	TWL15-075	2.94	75	2.94-2.75	75-70mm	TWR15-075070	2.94-2.56	75-65mm	TWR15-075065	2.94-2.38	75-60mm	TWR15-075060
	TWL15-080	3.13	80	3.13-2.94	80-75mm	TWR15-080075	3.13-2.75	80-70mm	TWR15-080070	3.13-2.56	80-65mm	TWR15-080065
	TWL15-085	3.38	85	3.38-3.13	85-80mm	TWR15-085080	3.38-2.94	85-65mm	TWR15-085065	3.38-2.75	85-70mm	TWR15-085070
	TWL15-090	3.50	90	3.50-3.38	90-85mm	TWR15-090085	3.50-3.13	90-80mm	TWR15-090080	3.50-2.94	90-75mm	TWR15-090075
	TWL15-095	3.75	95	3.75-3.50	95-90mm	TWR15-095090	3.75-3.38	95-85mm	TWR15-095085	3.75-3.13	95-80mm	TWR15-095080
	TWL15-100	3.88	100	3.88-3.75	100-95mm	TWR15-100095	3.88-3.50	100-90mm	TWR15-100090	3.88-3.38	100-85mm	TWR15-100085
	TWL15-105	-	105	-	105-100mm	TWR15-105100	-	105-95mm	TWR15-105095	-	105-90mm	TWR15-105090
	TWL15-425	4.25	-	4.25-3.88	-	TWR15-425388	4.25-3.75	-	TWR15-425375	4.25-3.50	-	TWR15-425350
	TWL15-110	-	110	-	110-105mm	TWR15-110105	-	110-100mm	TWR15-110100	-	110-95mm	TWR15-110095
	TWL15-115	-	115	-	115-110mm	TWR15-115110	-	115-105mm	TWR15-115105	-	115-100mm	TWR15-115100
TWLC30	TWL30-080	3.13	80	3.13-2.94	80-75mm	TWR30-080075	3.13-2.75	80-70mm	TWR30-080070	3.13-2.56	80-65mm	TWR30-080065
	TWL30-085	3.38	85	3.38-3.13	85-80mm	TWR30-085080	3.38-2.94	85-65mm	TWR30-085065	3.38-2.75	85-70mm	TWR30-085070
	TWL30-090	3.50	90	3.50-3.38	90-85mm	TWR30-090085	3.50-3.13	90-80mm	TWR30-090080	3.50-2.94	90-75mm	TWR30-090075
	TWL30-095	3.75	95	3.75-3.50	95-90mm	TWR30-095090	3.75-3.38	95-85mm	TWR30-095085	3.75-3.13	95-80mm	TWR30-095080
	TWL30-100	3.88	100	3.88-3.75	100-95mm	TWR30-100095	3.88-3.50	100-90mm	TWR30-100090	3.88-3.38	100-85mm	TWR30-100085
	TWL30-105	-	105	-	105-100mm	TWR30-105100	-	105-95mm	TWR30-105095	-	105-90mm	TWR30-105090
	TWL30-425	4.25	-	4.25-3.88	-	TWR30-425388	4.25-3.75	-	TWR30-425375	4.25-3.50	-	TWR30-425350
	TWL30-110	-	110	-	110-105mm	TWR30-110105	-	110-100mm	TWR30-110100	-	110-95mm	TWR30-110095
	TWL30-115	-	115	-	115-110mm	TWR30-115110	-	115-105mm	TWR30-115105	-	115-100mm	TWR30-115100
	TWL30-463	4.63	-	4.63-4.25	-	TWR30-463425	4.63-3.88	-	TWR30-463388	4.63-3.75	-	TWR30-463375
	TWL30-120	-	120	-	120-115mm	TWR30-120115	-	120-110mm	TWR30-120110	-	120-105mm	TWR30-120105
	TWL30-500	5.00	-	5.00-4.63	-	TWR30-500463	5.00-4.25	-	TWR30-500425	5.00-3.88	-	TWR30-500388
	TWL30-130	-	130	-	130-120mm	TWR30-130120	-	130-115mm	TWR30-130115	-	130-110mm	TWR30-130110
	TWL30-135	5.38	135	5.38-5.00	135-125mm	TWR30-135125	5.38-4.63	135-120mm	TWR30-135120	5.38-4.25	135-115mm	TWR30-135115
	TWL30-145	5.75	145	-	-	-	-	-	-	-	-	-
TWL30-150	-	150	-	-	-	-	-	-	-	-	-	
TWL30-155	6.13	155	-	-	-	-	-	-	-	-	-	

AVAILABLE UPON REQUEST

HYDRAULIC TOOLS



TORQUE WRENCH PUMPS

Hydraulic/Electric Predator Series

10,152 PSI 700 bar

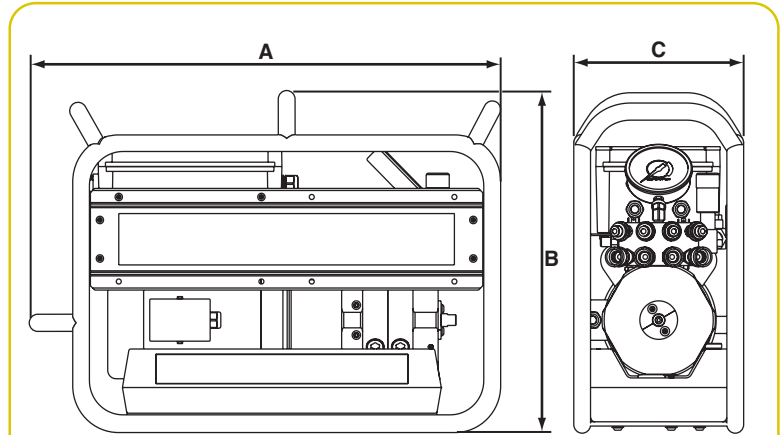
CONSTANT HORSEPOWER PUMP OR HORSEPOWER LIMITING PUMP. QUALITY-ENGINEERED AND PRECISION-MACHINED USING STRONG LIGHTWEIGHT ALLOYS.

PREDATOR SERIES HYDRAULIC ELECTRIC PUMPS

The new Predator Series electric pumps are the first constant horsepower pump or horsepower limiting pump in the portable hydraulic pump market. What can torque wrench users expect? In a word... SPEED.

A few advantages of the Predator Series Pumps:

- Up to twice the tool speed of typical 2-speed pumps
- Continuous Duty Operation
- External Pressure Adjustment
- Four Tool Manifold (Optional)
- Calibratable Gauge
- Roll Bar (Optional)
- Vented Hydraulic Reservoir
- Modular Pumping Cartridges
- 1,500 psi/103 Bar Return Side Relief Protection
- Marathon Lifetime Warranty

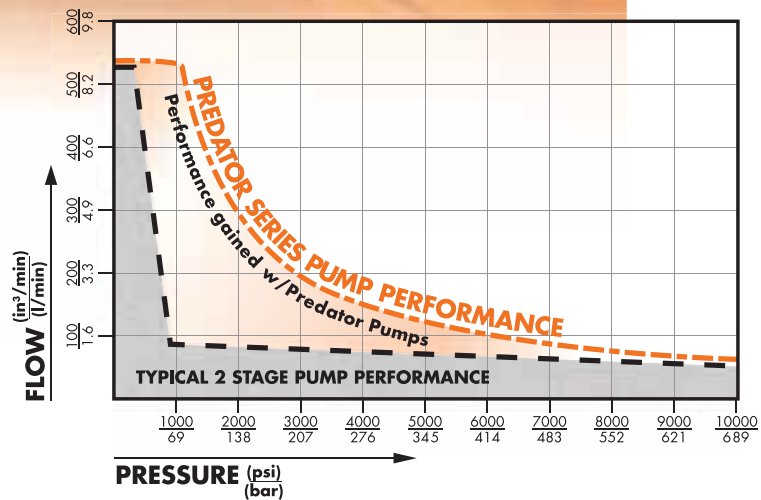
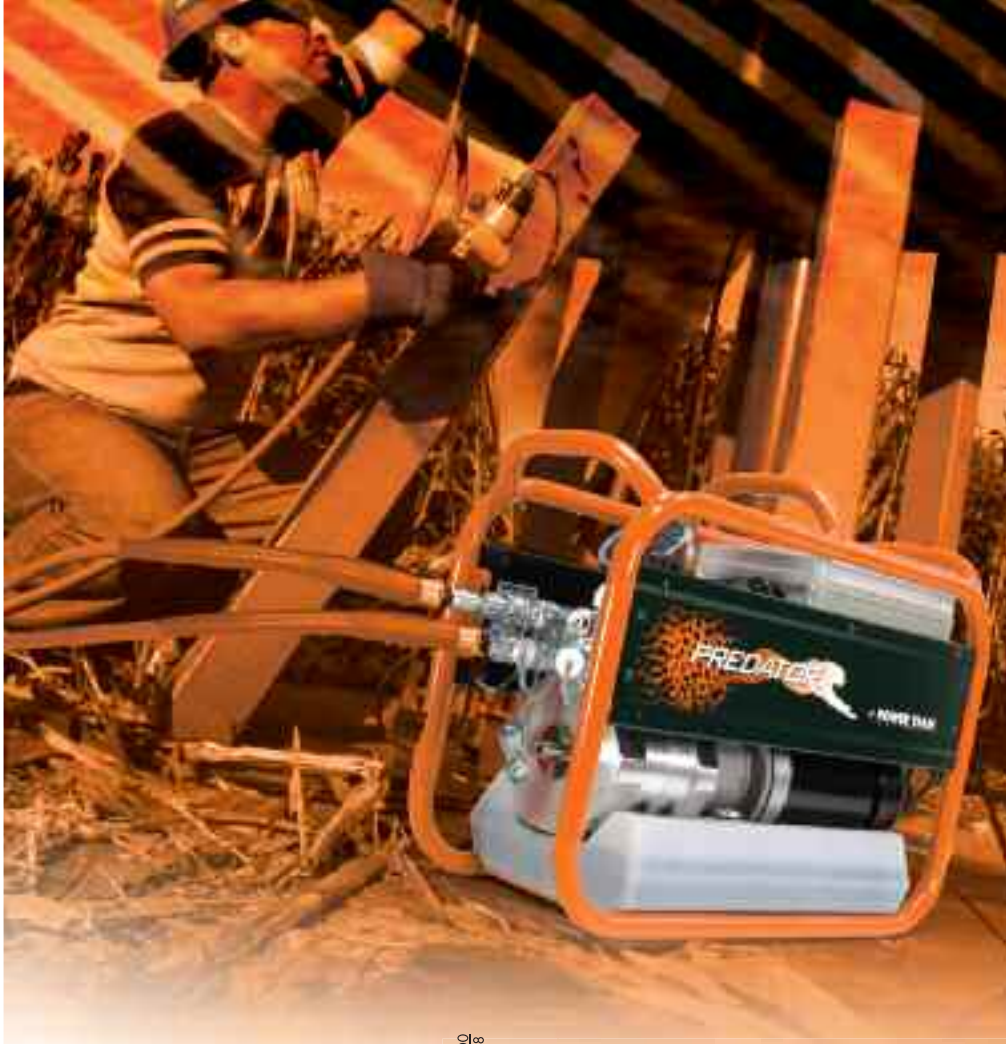


CAUTION: THIS SYSTEM IS NOT DESIGNED FOR LIFTING. Valving not set up for load-holding.

Patent Pending



Tool Model.	Voltage Freq.	Max. Pressure Output	RPM	dBa at Idle & @10,000 psi & 700 bar	Amp Draw @ @10,000 psi 700 bar	OIL DELIVERY					A	B	C	Product Weight (w/oil)
						@10,000 psi				Reservoir Usable	Height	Width	Length	
						48 bar	172 bar	350 bar	700 bar					
PCHE60A1BA-4	110-120V	10,000psi 700 bar	3,450	75	16	620 in. ³ /min.	237 in. ³ /min.	110 in. ³ /min.	60 in. ³ /min.	231 in. ³	19.88"	10.13"	28.00"	99lbs.
						10.1 L/min.	3.8 L/min.	1.8 L/min.	1 L/min.	3.8L	505mm	257mm	711mm	45kg
PCHE60A1BB-4	110-120V	10,000psi 700 bar	2,850	75	16	620 in. ³ /min.	237 in. ³ /min.	110 in. ³ /min.	60 in. ³ /min.	231 in. ³	19.88"	10.13"	28.00"	99lbs.
						10.1 L/min.	3.8 L/min.	1.8 L/min.	1 L/min.	3.8L	505mm	257mm	711mm	45kg
PCHE60A1BC-4	220-240V	10,000psi 700 bar	3,450	75	8	620 in. ³ /min.	237 in. ³ /min.	110 in. ³ /min.	60 in. ³ /min.	231 in. ³	19.88"	10.13"	28.00"	99lbs.
						10.1 L/min.	3.8 L/min.	1.8 L/min.	1 L/min.	3.8L	505mm	257mm	711mm	45kg
PCHE60A1BD-4	220-240V	10,000psi 700 bar	2,850	75	8	620 in. ³ /min.	237 in. ³ /min.	110 in. ³ /min.	60 in. ³ /min.	231 in. ³	19.88"	10.13"	28.00"	99lbs.
						10.1 L/min.	3.8 L/min.	1.8 L/min.	1 L/min.	3.8L	505mm	257mm	711mm	45kg



The above chart shows a traditional two stage hydraulic pump flow curve where high flow transitions to low flow at around 700 psi. The chart also shows that the Predator Series pump has much higher flow and flow remains smooth throughout the pressure curve. Flow is continually changing based on pressure, giving the maximum horsepower and flow for that pressure. The

biggest increase in flow is between 1,000 & 5,000 psi.

For tools such as torque wrenches that normally operate between 1,000 & 5,000 psi, the impact is significant – tools operate twice as fast, increasing productivity or getting the job done in much less time.

TORQUE WRENCH PUMPS

Hydraulic/Air Predator Series

**CONSTANT HORSEPOWER
PUMP OR HORSEPOWER
LIMITING PUMP. QUALITY
ENGINEERED AND PRECI-
SION-MACHINED USING
STRONG LIGHTWEIGHT AL-
LOYS.**

PREDATOR SERIES HYDRAULIC AIR PUMPS

The new Predator Series air pumps are the first constant horsepower pump or horsepower limiting pump in the portable hydraulic pump market.

What can torque wrench users expect? In a word..... SPEED.

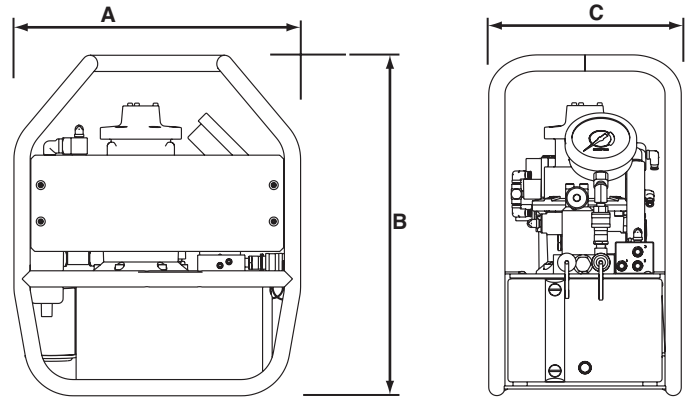
A few advantages of the Predator Series Pumps:

- Up to twice the tool speed of typical 2-speed pumps
- Continuous Duty Operation
- External Pressure Adjustment
- Four Tool Manifold (Optional)
- Calibratable Gauge
- Roll Bar (Optional)
- Sealed Hydraulic Reservoir
- Modular Pumping Cartridges
- 1,500 psi/103 Bar Return Side Relief Protection
- Exhaust air heat exchanger-built in
- FRL included
- Quiet operation



CAUTION: This Pump should not be used for lifting applications

Patent Pending



Tool Model.	Required Air Pressure	Max. Pressure Output	RPM	dBa at Idle & 700 bar	Reservoir Usable				A Height	B Width	C Length	Product Weight (w/oil)	
					48 bar	172 bar	350 bar	700 bar					
PCHA60T3B0-C	1,4 m ³ /min @ 6 bar	700 bar	3,000	75	19.8 L/min.	7.6 L/min.	3.6 L/min.	2 L/min.	3.8L	505mm	257mm	711mm	36.3kg
	50cfm/ @ 80psi	10,000 psi	3,000	75	1,240 in. ³ /min.	475 in. ³ /min.	220 in. ³ /min.	120 in. ³ /min.		19.88"	10.13"	28.00"	80 lbs

- Continuously variable performance curve offers maximum flow throughout the pressure range for greater productivity
- Designed for heavy-duty, extended cycle operation
- Internal oil path warms exhaust air to avoid freezing while cooling hydraulic oil to achieve optimum oil temperature
- ATEX II, CAT2, GDcT4 Compliant enables application in potentially explosive environments
- FRL Air Preparation Serviceable filter, regulator, lubricator ensures clean, lubricated & consistent air supply

- Easy operator adjustment to achieve corresponding torque values
- 1,500 psi/103 Bar Return Side Relief protection standard protection for return side of tool
- Marathon Lifetime Warranty Offers protection against defects in workmanship & material



CAUTION: This Pump should not be used for lifting applications

Calibratable, vibration damped gauge easy to read 4" diameter, 10,000 psi/700 bar

**Pneumatic remote control
25 ft. cord standard**



**Powerful 4 HP air motor
starts under load & yields up to twice
the flow of other air pumps for greater
application speed & productivity**

**Easily replaceable pump cartridges
minimize downtime & service costs**

**Muffled exhaust protects against elevated
noise to ensure operator comfort**

**Optional roll bar design offers
protection from damage**

**Four-tool manifold option enables application
of up to four torque wrenches for greater
worksite productivity**

HYDRAULIC TOOLS



TORQUE WRENCH PUMP

Hydraulic/Electric
PE30 Series

300 CU. IN./MIN MAX FLOW 10,000 PSI

VANGUARD® ELECTRIC HYDRAULIC TORQUE WRENCH PUMPS

- Two-speed general duty pump
- External adjustable pressure regulator
- Retract side internal relief valve protects tool
- Hand remote
- Use for double or single acting tools

CAUTION: This system should not be used for lifting applications.



Pump Model	Oil Delivery per min.	Oil Reservoir gal.	Usable Oil in. ³	Overall Width in.	Overall Length in.	Overall Height in.	Pump Weight w/Oil lbs.
PE30TWP							
PE30TWP-E110*	300 in ³ @ 100 psi						
PE30TWP-E220*	30 in ³ @ 10,000 psi	1.25	280	13.82	13.13	16.62	68

	Electric Motor	Electrical Data	Electrical Control
		4,000 rpm	
PE30TWP	1hp, 115V/60Hz, 13 amps		
PE30TWP-E220	220V/50Hz, 7 amps		
PE30TWP-E110	110V/50Hz, 13 amps		

*CE Approved - designed for 50 Hz applications



TORQUE WRENCH PUMP

Hydraulic/Electric
PE55 Series

VANGUARD® ELECTRIC HYDRAULIC TORQUE WRENCH PUMPS

- Two-speed high performance pump
- External adjustable pressure regulator
- Retract side internal relief valve protects tool
- Hand remote
- Use for double or single acting tools
- Four-tool manifold (-4 model only) allows use of up to four tools simultaneously

704 CU. IN/MIN 1-0,000 PSI



PE55TWP



PE55TWP-4

CAUTION: This system should not be used for lifting applications.

Pump Model	Oil Delivery per min.	Oil Reservoir gal.	Usable Oil in.3	Overall Width in.	Overall Length in.	Overall Height in.	Pump Weight w/Oil lbs.
PE55TWP							
PE55TWP-E110*	704 in ³ @ 100 psi	2.5	525	17.14	9.5	18.12	75
PE55TWP-E220*	56 in ³ @ 10,000 psi						
PE55TWP-4							
PE55TWP-4-E110*	704 in ³ @ 100 psi	2.5	525	18.49	9.5	19.15	78
PE55TWP-4-E220*	56 in ³ @ 10,000 psi						
X1E1-PT (Electric)							

	Electrical Data	
	Electric Motor	Electrical Control
PE55TWP	1-1/8 hp, 12000 rpm 115V, 25 amps	Remote control with 20-foot cord
PE55TWP-E110*	110V/50Hz, 25 amps	
PE55TWP-E220*	220V/50Hz, 13 amps	

* CE Approved-designed for 50Hz. applications.



TORQUE WRENCH PUMP

Air/Hydraulic
Pa55 SERIES

AIR HYDRAULIC TORQUE WRENCH PUMP

- Use where air is the preferred source of power
- Powerful 3 hp motor starts under load
- External adjustable pressure regulator
- Retract side internal relief valve protects tool
- Use for double or single acting tools

**MAX FLOW 704 CU.
IN./MIN. 10,000 PSI**

**COUPLERS
INCLUDED
WITH PUMP**

⚠ CAUTION: This system should not be used for lifting applications.



Pump Model	Oil Delivery per min.	Oil Reservoir gal.	Usable Oil in. ³	Overall Width in.	Overall Length in.	Overall Height in.	Pump Weight w/Oil lbs.
RWP55	465 in ³ @ 100 psi 55in ³ @ 10,000 psi	2.5	590	16.55	9.5	19.83	98
RWP55-4 (4-tool manifold)	465 in ³ @ 100 psi 55in ³ @ 10,000 psi	2.5	590	16.55	9.5	19.83	98



Air Motor	Motor Data	Air Control
3 hp, 50 cfm @ 80 psi		Pneumatic remote control with 25-foot cord

NUT SPLITTERS

Hydraulic
15 & 25 Ton Capacity

HYDRAULIC NUT SPLITTERS –

15- & 25-TON CAPACITY

- “Dial-in” feature on HNS150 makes adjustment of splitter simple, without the worry of damaging the bolt
- Specially designed “tool steel” cutter blade penetrates the nut to the precise point where it cracks, stopping short of the bolt threads
- Nut splitter features a dramatically improved cutter blade with an 800% greater resistance to chipping and breaking over previous models

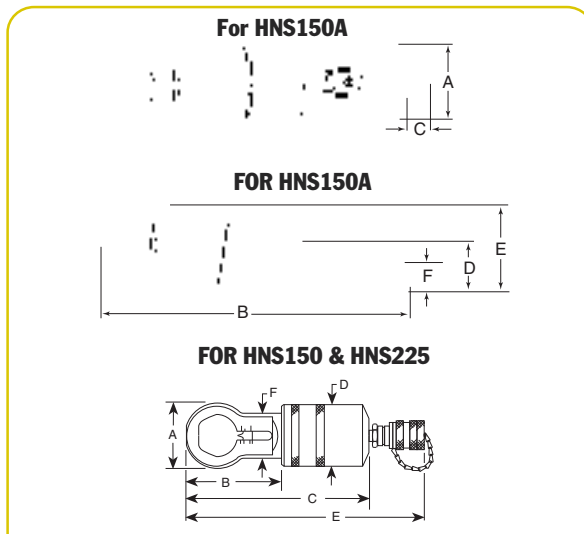
- All models feature a rugged one-piece cutting frame coupled to a heavy-duty hydraulic cylinder
- Compact size allows you to use it in confined areas where it will deliver enough force to split the toughest “fused” or rusted-on grade 2H nuts
- Simply split nut on one side, spin nut splitter 1/2 turn and make second cut on opposite side; nut separates into halves for easy removal



HNS150



HNS225



Align mark on cutter blade with scale.

FOR HNS150 & HNS225

Tool Model	A	B	C	D	E	F	HEAD THICKNESS	REPLACEMENT BLADE	TOOL WEIGHT
HNS150	2.875	3.375	7.875	2.75	10.375	2.0625	1	308840	8.1
HNS150A	3.02	14.20	1.03	2.11	3.70	1.16	1	351985	15.8
HNS225	4.25	6	14.375	3.875	N/A	3.25	1.5	308022	29

HYDRAULIC TOOLS



CAPACITIES

Tool Model	2 or A	Nut Grade 5 or B	8 or C	2H
HNS150	1/2 - 1-1/2 in. hex	1/2 - 1-1/2 in. hex	1/2 - 1-5/16 in. hex	1/2 - 1-1/8 in. hex
HNS150A	1/2 - 1-1/2 in. hex	1/2 - 1-1/2 in. hex	1/2 - 1-5/16 in. hex	1/2 - 1-1/8 in. hex
HNS225	1-1/8 - 2-1/4 in. hex	1-1/8 - 2-1/4 in. hex	1-1/8 - 2-1/16 in. hex	1-1/8 - 1-11/16 in. hex

PIPE FLANGE

Hydraulic Spreaders

5 & 10 Ton



HFS3A

- You'll never again have to resort to "hammer and chisel" methods that waste time and effort. Flange spreaders should be used in pairs to provide even spreading force.
- Standard 60° wedge is suitable for most flanges; 30° "thin" and 60° "blunt" wedges are optional.
- The HFS3A is designed for applications where total thickness of flanges and max. spread gap is 3" or less and flange bolts are a min. of $\frac{11}{16}$ " dia.
- Use HFS6A if total thickness of flanges and max. spread gap is 6" or less, and flange bolts are a min. of $\frac{13}{16}$ " dia.



350823



350822



350549



350550

Capacity (tons)	Order Number	Standard Wedge Type	Optional Wedges		Min. Flange Opening			Max. Flange Opening			Min. Combined Flange Opening	Pin Dia. (in.)	Weight (lbs.)
			30° Thin	60° Blunt	60° Std.	60° Blunt	30°	60° Std.	60° Blunt	30°			
5	HFS3A	60° Sharp	350823	350822	$\frac{1}{16}$ "	1"	$\frac{3}{16}$ "	$1\frac{1}{4}$ "	$1\frac{1}{4}$ "	$\frac{23}{32}$ "	3 $\frac{1}{2}$ "	$\frac{11}{16}$ "	9
10	HFS6A	60° Sharp	350549	350550	$\frac{1}{16}$ "	1 $\frac{1}{2}$ "	$\frac{3}{16}$ "	2"	2"	$\frac{31}{32}$ "	6 $\frac{9}{16}$ "	$\frac{13}{16}$ "	18

SPREADERS

Hydraulic

1-1¹/₂ Ton



HS2000
(Forged Steel)

IT'S A HYDRAULIC PRY BAR!

- Use to lift machines or as a clamp; spread concrete forms or rebar or perform straightening jobs.
- Conforms to ASME B30.1 standard.
- High strength alloy steel forged upper and lower jaws on HS2000.
- Jaws are spring-return; retract automatically when pressure is released.

No. HS2000 – 1-ton capacity spreader. Full 2,000 lbs. capacity at 10,000 psi. with 4" spread. Can be "dead-ended" at 4"

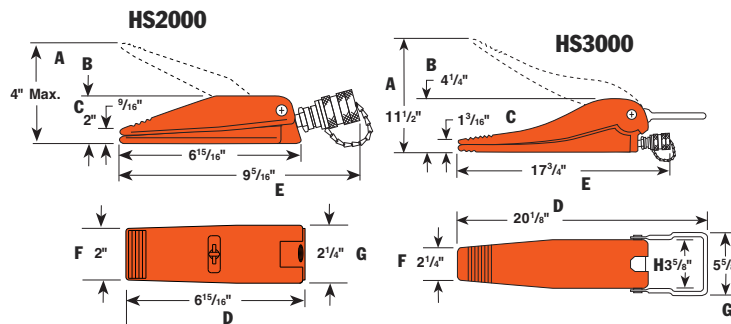
spread under full load. Needs only 9/16" clearance to engage jaws.

No. HS3000 – 1¹/₂-ton capacity spreader. Full 3,000 lb. capacity at 10,000 psi. with 11¹/₂" spread. Greater than competitive units. Needs only 1³/₁₆" clearance to engage jaws. Can be "dead-ended" at 11¹/₂" spread at full load.

HS3000
(High Grade Ductile Iron)



Tested to conform to ASME B30.1 standard



1	4	HS2000	4	2	9/16	6 15/16	9 5/16	2	2 1/4	—	.63	9/16	4.8
1 1/2	11 1/2	HS3000	11 1/2	4 1/4	1 3/16	20 1/8	17 3/4	2 1/4	5 5/8	3 5/8	3.5	1 1/4	22

HS2000 SPECIFICATIONS

Maximum rated capacity....1 ton @ 10,000 psi
 Maximum spread4"
 Minimum clearance required9/16"
 Cu. in. oil required63

HS3000 SPECIFICATIONS

Maximum rated capacity... 1¹/₂-ton @ 10,000 psi
 Maximum spread..... 11¹/₂"
 Minimum clearance required1³/₁₆"
 Cu. in. oil required 3.50

HYDRAULIC TOOLS



C-CLAMPS

Hydraulic Accessories

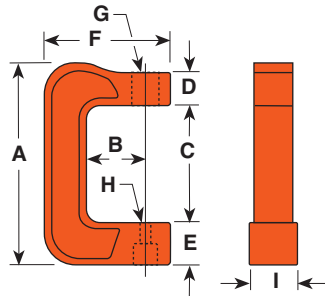
- In 5, 10 and 25 ton capacities. For use with Power Team general purpose single-acting series cylinders of comparable capacity.
- For clamping, pressing and bending. Ideal for welding and metal fabrication for fit-up of sheet or plate steel.
- Clamps withstand full rated capacity of the cylinders for which they are intended.
- To minimize the effects of off-center loading, the CC5, CC10 and CC25 should be used with the optional 350144 and 350145 swivel caps.



CC10

"C" CLAMPS 5, 10 & 25 TONS

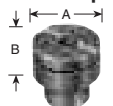
Items pictured are:
CC10
C104C
201923



A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	I (in.)	Weight (lb.)	Cap. (tons)	Order Number (C-Clamp only)	Use With Cyl. No.
12 ³ / ₈	3 ³ / ₄	7 ⁵ / ₁₆	2	2 ¹ / ₂	7 ³ / ₄	1 ¹ / ₂ "-16 UN	7 ⁷ / ₈	3	25	5	CC5	C51C-C57C
15 ⁷ / ₈	6	9 ¹³ / ₁₆	2	3	10 ³ / ₄	2 ¹ / ₄ "-14 UNS	7 ⁷ / ₈	3 ¹ / ₂	50	10	CC10	C101C-C1010C
21	6	13	3	4	12 ⁵ / ₁₆	3 ⁵ / ₁₆ "-12 UNS	1 ⁷ / ₁₆	4 ⁵ / ₈	65	25	CC25	C251C-C2514C

OPTIONAL ACCESSORIES FOR USE WITH CC5, CC10 & CC25 HYDRAULIC CLAMPS

Swivel Caps



5/10 ton
350144*
A-1³/₈"
B-3³/₄"

25 ton
350145
A-2"
B-1"

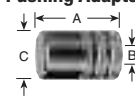
Threaded Adapters



10 ton
38597
A-1 - 8
B-1 - 8
C-3³/₄"
D-2"

25 ton
38953
A-1¹/₄-7
B-1¹/₂-16
C-2³/₄"
D-4³/₈"

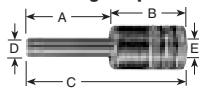
Pushing Adapters



10 ton
28228**
A-2³/₈"
B-1 - 8
C-1¹/₂"

25 ton
28229**
A-2⁷/₈"
B-1¹/₄-7
C-1³/₄"

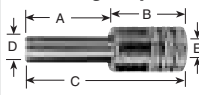
Pushing Adapters



10 ton
201923**
A-3¹/₈"
B-2¹/₄"
C-5³/₈"
D-1¹/₂"
E-1 - 8

25 ton
34510**
A-3¹/₄"
B-2⁵/₈"
C-5⁷/₈"
D-3³/₄"
E-1¹/₄-7

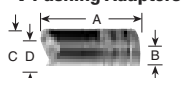
Pushing Adapters



10 ton
201454**
A-3¹/₁₆"
B-2⁵/₈"
C-5¹/₁₆"
D-3³/₄"
E-1 - 8

25 ton
34511**
A-3¹/₄"
B-2³/₈"
C-5¹/₈"
D-1"
E-1¹/₄-7

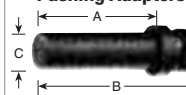
V Pushing Adapters



10 ton
34806**
A-2⁵/₈"
B-1 - 8
C-1¹/₂"
D-1"

25 ton
34807**
A-3¹/₈"
B-1¹/₄-7
C-1³/₄"
D-1¹/₄"

Pushing Adapters



5 ton
309874*
A-2¹/₃₂"
B-2²⁵/₃₂"
C-5⁵/₈"

* May be used with CC5
** Must be used with a threaded adapter.



HYDRAULIC TOOLS

TIRE REMOVING

BB Series tool

10 Ton Hydraulic

TIRE REMOVING TOOL

- Made to fit into the pry bar pocket
- Hydraulic pressure does all the unseating.
- Lightweight and portable.
- P55 hydraulic hand pump and 9764 hose recommended to be used with BB1600.



HYDRAULIC TOOLS



Tool Model	Tool Weight lbs.	Rim Size	Cylinder Capacity (@10,000)	Stroke (in.)
BB1600	22.5	25"-49"	11.2	4
BB1601	24	25"-49"	11.2	4
Contact Factory	30	Single, two, three piece rims 25"-51"	13.8	4.25

HYDRAULIC PUNCHES

20 & 35 Ton

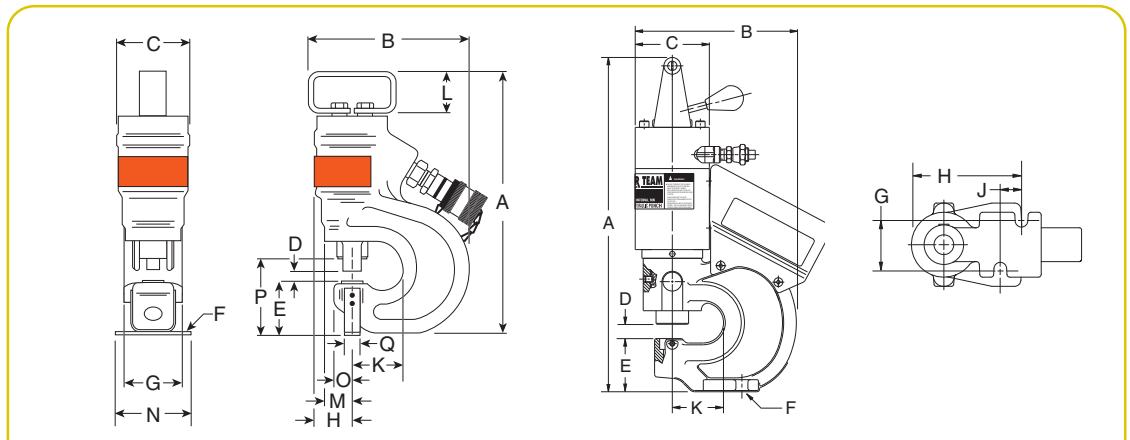


- Punch smooth, precise holes in seconds; much faster than drilling.
- Fully portable for construction, maintenance and service applications, or can be mounted on a workbench for production jobs. Has carrying handle for precise locating.
- Rugged, forged steel “C” frame for great strength and durability.
- Dual action, spring loaded stripper holds material during punching operation, strips material from punch on return. Scribe lines on stripper aid in locating the punch (HP 35 only).

- Double Acting prevents binding and speeds retraction (HP20 only).
 - **The PE172** electric/hydraulic pump is an ideal power source.
- No. HP35** – Punch only, includes metal case and die change tools. Wt., 42.5 lbs.
- No. HP35S** – Punch with punches and dies. Includes HP35 punch, metal case and 250459 punch/die set. Wt., 44 lbs.
- No. HP35P** – Punch set with pump. Same as HP35SP but does not include punch/die set. Wt., 86.3 lbs. NOTE: Available in 220 volt, 50 Hz. Order with suffix “-220”.

No. HP35SP – Punch set with pump. Includes HP35 punch, PE172 electric/hydraulic pump, 9756 hose, 9798 hose half coupler, 250459 punch/die set, metal case. Wt., 87.8 lbs. NOTE: 220 volt, 50 Hz. Order with suffix “-220”.

No. 250459 – Punch/die set for round holes. Includes one each: PD437 $\frac{7}{16}$ " punch/die, PD562 $\frac{9}{16}$ " punch/die, PD688 $\frac{11}{16}$ " punch/die, PD812 $\frac{13}{16}$ " punch/die. Wt., 1.5 lbs.



Cap.	Order Number	Max. Oper. Press.	Oil Cap.	Max. Material Thickness	Mtng. Holes																
					A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	
20	HP20	10,000 psi	3.9 cu.in.	$\frac{1}{2}$	$16\frac{1}{2}$	$7\frac{61}{64}$	$3\frac{21}{32}$	$\frac{5}{8}$	$2\frac{19}{32}$	$\frac{9}{16}$	$2\frac{1}{8}$	$4\frac{7}{8}$	$\frac{15}{16}$	$2\frac{1}{4}$	—	—	—	—	—	—	
35	HP35	10,000 psi	4.6 cu.in.	$\frac{1}{2}$	$13\frac{3}{4}$	9	$3\frac{3}{4}$	$\frac{9}{16}$	$2\frac{7}{8}$	$\frac{1}{4}$	3	$1\frac{13}{16}$	—	$2\frac{13}{16}$	$2\frac{1}{4}$	$1\frac{1}{2}$	$3\frac{1}{2}$	$\frac{7}{8}$	4	$\frac{3}{4}$	

HP20

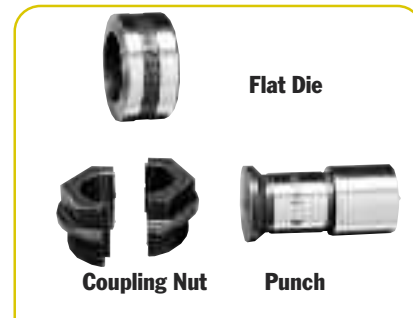
No. HP20 – Basic punch. Wt., 33 lbs.

No. HP20S – Punch frame with cylinder, valve, handle, two coupling nuts, plus five punch and die sets in 1/4", 5/16", 3/8", 7/16", and 17/32" dia. Wt., 35 lbs.

No. HP20SP* – Complete punch set with PE102A pump (115V, 50/60 Hz), 9682 nipple, two 9792 female couplers and two 9793 male couplers. Also includes two 9758 10' hoses, 9680 coupling, and same punch and die sets as in HP20S (above). Tool is completely assembled and pre-filled with oil. In storage box. Wt., 83 lbs.



Punch Set HP20SP
Includes the PE102A pump, hoses, couplers, punch and die sets in sizes 1/4", 5/16", 3/8", 7/16", and 17/32" diameter, with storage box.



TYPICAL 20 TON STYLE TOOLING

PUNCH/DIE SETS FOR HP20 & HP35 HYDRAULIC PUNCHES

For use with HP20 Hydraulic Punch						For use with HP35 Hyd. Punch		Punch Size (in.)	INCHES		MM	
Punch Size (in.)	Punch Style	Punch No.	Flat Die No.	Bevel Die No.	Coupling Nut No.	Punch/w Flat Die Set	Punch/w Bevel Die Set		Hole Dia.	Bolt	Hole Dia.	Bolt
1/4	Round	251970	251983	—	252001	—	—		1/4	1/4	#10	6.3
5/16		251971	251984	—	252001	PD313	—	5/16	5/16	1/4	7.9	—
3/8		251972	251985	251996	252001	PD375	PD375B	3/8	3/8	5/16	9.5	M8
7/16		251973	251986	251997	252001	PD437	PD437B	7/16	7/16	3/8	11.2	M10
17/32		251974	251987	251998	252001	PD531	PD531B	17/32	17/32	7/16	13.5	M12
9/16		251975	251988	251999	252001	PD562	PD562B	9/16	9/16	1/2	14.3	—
11/16		251976	251989	—	252001	PD688	—	11/16	11/16	5/8	17.5	M16
25/32		251977	251990	—	252002	PD781	—	25/32	25/32	—	19.8	M18
13/16		251978	251991	—	252002	PD812	—	13/16	13/16	3/4	20.6	—
1/2	Square	251979	251992	—	252002	—	—	—	—	—	—	—
17/32		251980	251993	—	252002	—	—	—	—	—	—	—
1/4 X 3/4	Obround	251981	251994	—	252002	—	—	—	—	—	—	—
3/8 X 3/4		251982	251995	—	252002	—	—	—	—	—	—	—



ACCESSORIES FOR HP20 HYDRAULIC PUNCH

No. HP20FS – Optional foot switch mounted in foot switch guard. Supplied with 10 foot cord and male remote connector. Wt., 2 lbs.

No. HP20HS – Optional handswitch. Supplied with 10 foot cord and male remote connector. Wt., 2 lbs.

No. 252000 – Optional coupling nut wrench. Makes punch/die changes easier without “rounding-off” coupling nuts. Wt., 0.5 lbs.

TESTERS

Hydraulic

50, 75 & 200 GPM



HT50A



HT200

50-, 75- AND 200-GPM IN-LINE HYDRAULIC TESTERS

- Accurately measure oil flow, pressure and temperature on in-plant equipment, forklifts, machine tools and more.
- Temperature and flow readings are in Metric and English, accurate to within $\pm 2\%$ of full scale.
- Dual pressure gauges for high and low pressure readings; low pressure gauge is automatically shut off and protected as pressure rises beyond its maximum reading.
- Automatic pressure compensating

feature lets you increase flow without affecting pressure setting.

- Reverse flow through tester will not cause damage; replaceable safety disc ruptures if pressure exceeds upper limit.
- Solid state voltage regulator eliminates errors caused by voltage change during testing.

50-, 75- AND 200-GPM IN-LINE HYDRAULIC TESTERS

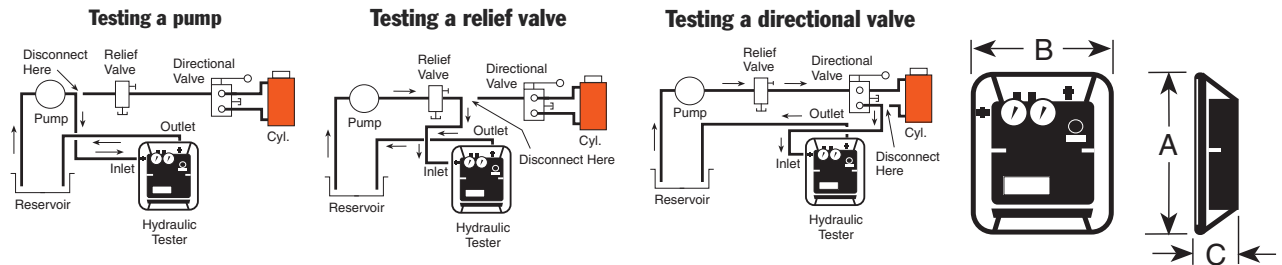
- Troubleshoots systems with capacities to 200 gpm at pressures less than 5,000 psi. Accurately measure oil flow

to $\pm 5\%$, pressure to within 2% and temperature readings within 1%.

- Pressure gauge is liquid filled to dampen system pulsation.

For more precise low pressure readings, an optional dual pressure gauge kit is available (see page 185).

No. HT50A – Hydraulic circuit tester with single liquid filled pressure gauge, 0-5,000 psi, 0-354 bar. Includes two adapter unions for $\frac{3}{4}$ " male NPT fittings. Wt., 37 lbs.



Order Number	Max Flow (gpm)	Scale	Flow Ranges		Max. Oper. Pressure		Temp. Scale Range		Port Sizes	Weight		A in. (mm)	B in. (mm)	C in. (mm)
			gpm	L/min.	psi	BAR	°F	°C		lbs.	kg.			
HT50A	50	—	0-50	0-200	5,000	345	20-240	-6 to 114	$1\frac{1}{16}$ -1.2 UN Female "O" Ring with Union Adapt. $\frac{3}{4}$ " Female NPTF	30.3	16.8	12 $\frac{1}{4}$ (311)	6 $\frac{1}{4}$ (159)	10 (255)
HT75	75	High Low	15-75 3-15	50-300 10-60	5,000	345	100-250	40-120	$\frac{3}{4}$ " NPT Swivel	18.2	8.6	13 $\frac{3}{4}$ (349.25)	11 $\frac{7}{8}$ (301.62)	5 $\frac{3}{4}$ (146.05)
HT200	200	High Low	25-200 5-40	100-750 20-150	5,000	345	100-250	40-120	1 $\frac{1}{2}$ "* SAE Split Flange	28.2	13.6	15 $\frac{7}{8}$ (403.47)	13 $\frac{3}{4}$ (336.55)	6 $\frac{3}{4}$ (171.45)

For a complete listing of accessories for the HT series of hydraulic system testers, see pages 185-186. *Not included, must be ordered separately, see page 186.



TESTER

Hydraulic Service

Accessories



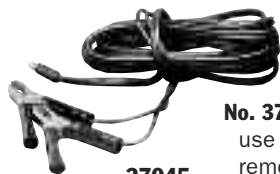
307281

DUAL GAUGE CONVERSION KIT FOR 50 GPM TESTER.

Provides more precise low pressure readings. Remove pressure gauge block and gauge from tester and replace it with this block. Install high pressure gauge from tester (0-5,000 psi) onto this new block.

No. 307281 – Dual gauge conversion kit. Consists of gauge mounting block, pulsation dampener, thermal overload protector, low pressure gauge and gauge protector. Wt. 1 lb.

307281 Low pressure gauge calibrated 0-600 psi 0-42 bar.



37045

No. 37045 – Auxiliary power cord. For use with any 12 or 24 volt battery to remotely power tester. Wt. 0.1 lb.
CAUTION: For use on negative ground systems only.

Auxiliary power cords for use with 75 and 200 gpm testers

No. 204990 – Auxiliary power converter. Permits use of 120/230 volt outlet to power tester. Wt. 1 lb.



204990

**9785
9786
8987
9788**



Hoses

No. 9785 – Hose, $\frac{3}{4}$ " I.D. x $\frac{3}{4}$ " NPTF male both ends. 10 ft. length. 2,250 psi working pressure. (2 req'd on 50 and 75 gpm testers) Wt., 0.7 lb.

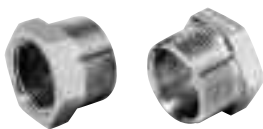
The following hose assemblies are all 4-ply spiral wound wire, 10 ft. long. For use with 200 gpm testers.

No. 9786 – Hose, 1" I.D. x $\frac{1}{4}$ " NPT male both ends. Recommended max. flow 90 gpm, with a working pressure of 4,000 psi. Wt., 14 lbs.

No. 9787 – Hose, $\frac{1}{4}$ " I.D. x $\frac{1}{4}$ " NPT male both ends. Recommended max. flow 140 gpm, with a working pressure of 3,000 psi. Wt., 21 lbs.

No. 9788 – Hose, $\frac{1}{2}$ " I.D. x $\frac{1}{2}$ " NPT male both ends. Recommended max. flow 200 gpm, with a working pressure of 2,500 psi. Wt., 25 lbs.

203264



Hose reducer bushings

No. 203264 – Consists of two hose reducer bushings, $\frac{1}{4}$ " NPT female x $\frac{1}{2}$ " NPT male end. Needed to adapt No. 9786 1" I.D. hose and No. 9787 $\frac{1}{4}$ " I.D. hose to tester. Wt., 2.2 lbs.

HYDRAULIC TOOLS



HYDRAULIC TESTER

Service Accessories

Fittings/Adapters For the 200 GPM Hydraulic Tester

ATTACH TO THE HT200 HYDRAULIC TESTER BY THE USE OF FLANGED-HEAD ADAPTERS AND SPLIT FLANGES, OR BY A SET OF FEMALE SOTRAIGHT ADAPTERS.

FLANGED HEAD ADAPTER UNIONS AND SPLIT FLANGE KIT

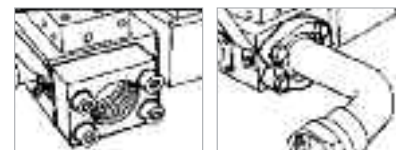
No. 203154 – Straight flange adapter. 1½" flanged-head to 1½" NPSM female swivel. Wt., 2.2 lbs.

No. 203155 – 45° flange adapter. 1½" flanged-head by 1½" NPSM female swivel. Wt., 3.2 lbs.

No. 203156 – 90° flange adapter. 1½" flanged-head by 1½" NPSM female swivel. Wt., 4.2 lbs.

No. 203017 – Split flange kit. Consists of four flange halves and attaching bolts to permit use of 1½"


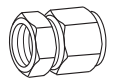

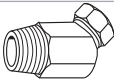

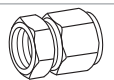

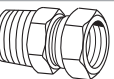

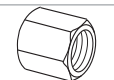


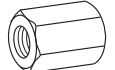
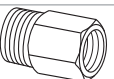
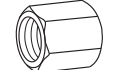

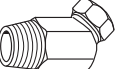

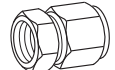
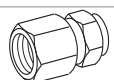




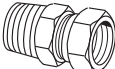

I.D. flange adapters listed at left. Wt., 2.9 lbs.



FEMALE STRAIGHT FLANGE ADAPTER

No. 203003 – Consists of two female straight flange adapters with attaching bolts. When attached to inlet/outlet ports, allows connection of 1½" NPT male hose ends to tester. Wt., 8.5 lbs.

HYDRAULIC FITTINGS FOR USE WITH ALL TESTERS.

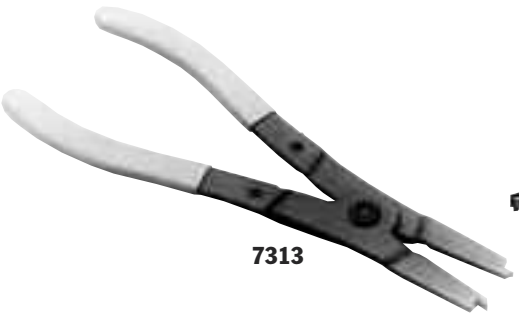
	No. 16954 – 90° swivel adapter, ¾" NPTF male x ¾" NPSM female. Wt., 0.8 lb.		No. 26073 – Swivel adapter, ¾" NPTF female x ½" NPSM female. Wt., 0.3 lb.
	No. 22041 – Coupler, ¾" NPTF male x ¾"-16 female ORB. Wt., 0.5 lb.		No. 26074 – 45° swivel adapter, ¾" NPSM female x ¾" NPTF male. Wt., 0.6 lb.
	No. 22042 – Coupler, ¾" –16 female ORB x 1½"-12 female 37° JIC. Wt., 0.4 lb.		No. 26075 – Swivel adapter, ¾" NPSM female x ¾" NPTF female. Wt., 0.4 lb.
	No. 22043 – Coupler, ¾" –16 female ORB x 9/16"-18 female 37° JIC. Wt., 0.4 lb.		No. 26076 – Swivel adapter, ¾" NPTF male x ¾" NPSM female. Wt., 0.4 lb.
	No. 22044 – Coupler, ¾" –16 female ORB x ½"-20 female 37° JIC. Wt., 0.4 lb.		No. 26077 – Cap, ¾" NPTF. Wt., 0.6 lb.
	No. 27737 – Swivel adapter, ¾" –16 male x ¾" NPSM female. For use with No. 9785 hose, which has ¾" NPTF male thread. Wt., 0.3 lb.		No. 26078 – Plug, ¾" NPTF. Wt., 0.3 lb.
	No. 27287 – Coupler, ¾" –16 UNF female ORB x 7/8"-14 UNF female 37° JIC. Wt., 0.4 lb.		No. 26079 – Adapter, ¾" NPTF female x 1½"-12 male ORB. Wt., 0.4 lb.
	No. 13449 – Cap, 1½"-12 UNF female, ¾" O.D. tube, 37° flare. Wt., 0.2 lb.		No. 208402 – 45° union adapter, 7/8"-14 UNF male 37° JIC x ¾" NPTF female. 3,000 psi working pressure. Wt., 0.6 lb.
	No. 26068 – 45° swivel adapter, 1" NPTF male x ¾" NPSM female. Wt., 0.8 lb.		No. 208401 – 45° union adapter, 7/8"-14 UNF male 37° JIC x ¾" NPTF female. Wt., 0.7 lb.
	No. 26069 – Swivel adapter, 1" NPTF female x ¾" NPSM female. Wt., 0.5 lb.		No. 206753 – Coupler, 1½"-12 UNF female 37° JIC x ¾" NPTF female. Wt., 1.1 lbs.
	No. 26070 – Adapter, 1" NPTF male x ¾" NPTF female. Wt., 0.3 lb.		No. 26666 – Connector, 1½"-12 UNF male 37° JIC x ¾" NPTF male. Wt., 0.4 lb.
	No. 26071 – Service tee, ¾" NPTF female (2) x ¾" NPTF male. Wt., 0.9 lb.		No. 28984 – Straight adapter, ¾" NPTF female x 1½"-12 UN male 37° JIC. Wt., 0.6 lb.
	No. 26072 – Swivel adapter, ¾" NPSM female x ½" NPTF male. Wt., 0.4 lb.		No. 28985 – Straight adapter union, 1½"-12 UN female 37° JIC x ¾" NPTF female. Wt., 1.3 lbs.

NOTE: The recommended maximum working pressure on the above fittings is 5,000 psi except the 208402.



RETAINING RING PLIERS

Internal and External



7313



714

HORSESHOE LOCK RING PLIER

- For removing horseshoe lock rings used on hydraulic brakes, differentials, etc. Plier is 8" long; max. spread: ¹⁵/₁₆"

No. 714 – Horseshoe lock ring plier. Wt., 0.4 lb.

No. 7313 – External snap ring plier easily removes snap rings used to retain bearings on shafts. Max. spread: ¹⁷/₁₆".

RETAINING RING PLIER KITS

- Choose from four sets; internal ring, external ring and convertible pliers for either internal or external rings.

No. 7053K – Replaceable tip pliers kit. This versatile kit contains (1) internal and (1) external pliers with (8) tip sets. Two sets each: .038 dia. 90° bend, .047" dia. straight, .047" dia. 90° bend, .070" dia. straight. Recommended for ¹/₄"–2" rings. Packaged in plastic storage case. Wt., 0.8 lb.

No. 15702 – Replaceable tip kit (only for No. 7053K.

No. 7123K – Convertible pliers kit. Contains **No. 1120** (.038" dia./straight tip) and No. 1340 (.070" dia./straight tip). Each pliers "converts" to handle both internal and external rings. Packaged in a reusable plastic storage case. Wt., 0.8 lb.

No. 7125K – Convertible pliers kit. Contains **No. 1125** (.038" dia./45° bent tip) and No. 1345 (.070" dia./45° bent tip). Each pliers "converts" to handle both internal and external rings. Packaged in a reusable plastic storage case. Wt., 0.8 lb.

No. 7406K – Professional pliers kit. Contains (6) retaining convertible pliers to handle both internal and external rings from ¹/₄"–2". Includes straight and 90° off-set pliers with .038", .047", and .070" tip diameters. Includes Nos. 1120, 1131,

1320, 1329, 1340 and 1349. Packaged in an impact resistant storage case. Wt., 2 lbs.

REPLACEMENT TIPS FOR 7300 AND 7301 PLIERS

No. 209201 – Replacement tips (pr.) for the 7300 and 7301 pliers. Wt., 0.1 lb. Fed. Spec.:GGG-P-480



7053K
internal &
external
plier, 4 sizes
of tips.



7123K



7406K



External Internal Convertible

No. 0200	No. 7301	No. 0100	No. 7300	No. 1120
No. 0400		No. 0300		No. 1320
No. 0600		No. 0500		No. 1340
				No. 1125*
				No. 1345*
				No. 1131**
				No. 1329**
				No. 1349**

Fed. Spec.: GGG-P-480-E

* 45° Angled Tips

** 90° Angled Tips

RETAINING RING PLIERS SELECTION GUIDE

Plier No	Tip Bend	Tip Size Dia. (in.)	For Int'l Rings* Bore Dia. (in.)	For External Rings* Shaft Dia. (in.)
0100	Str.	.038	.375 – 1.023	—
0200	Str.	.038	—	.250 – .875
0300	Str.	.070	1.062 – 1.750	—
0400	Str.	.070	—	.938 – 1.438
0500	Str.	.090	1.812 – 3.500	—
0600	Str.	.115	—	1.500 – 3.500
7300	Str.	.120	3.062 – 6.000	—
7301	Str.	.120	—	3.543 – 6.500
Convertible Pliers				
1120	Str.	.038	.375 – .562	.250 – .672
1125	45°	.038	.375 – .562	.250 – .672
1131	90°	.038	.375 – .562	.250 – .672
1320	Str.	.047	.625 – 1.023	.687 – .875
1329	90°	.047	.625 – 1.023	.687 – .875
1340	Str.	.070	1.062 – 1.750	.938 – 1.438
1345	45°	.070	1.062 – 1.750	.938 – 1.438
1349	90°	.070	1.062 – 1.750	.938 – 1.438

*Capacities are shown for basic style rings.

CAUTION: Always wear safety goggles when using pliers

MECHANICAL TOOLS

SERVICE TOOLS

Accessories

PHOTO TACHOMETER

- Infrared light source, micro-processor controlled crystal display.
- Strong magnetic base is included.

Machine speed: It is critical for proper machining operations. Speeds too fast or too slow can shorten tool life and cause expensive, unnecessary machine downtime. This digital photo tach can take readings from revolving shafts on drill presses, grinders, lathes and other machines. It can also be used to check engine operation on in-plant vehicles like forklifts. The 3344 is accurate to within ± 1 rpm. The $\frac{3}{32}$ " high liquid crystal display is easily visible even in high ambient light areas.

HTS50 HEAVY-DUTY PIPE SEALANT WITH TEFLON®

- Seals new or damaged threads; resists water, chemicals and oils.
- Replaces conventional tape methods; forms a clog-free seal. Effective at 10,000 psi.

When "plumbing" a hydraulic system, there's now a better answer than tapes which can tear or shred, possibly plugging filters, valves or gauges. This compound combines the lubri-

No. 3344A – Digital Photo Tachometer. With memory, photo probe assembly, magnetic base, 108" of reflective tape and plastic case. Wt., 4.5 lbs.

No. 39811 – Replacement magnetic base assembly. Wt. 0.3 lb.

No. 45329 – Replacement photo probe assembly. Wt., 0.4 lb.

No. 204666 – Replacement retro-reflective indicator tape, 108" long x $\frac{1}{2}$ " wide. Wt., 0.1 lb.

SPECIFICATIONS

Readout: Liquid crystal display: 4 ($\frac{13}{32}$ " high) digits, low battery indicator, memory mode indicator, high and low RPM memory mode indicator.



3344A

Range: 200 to 9999 rpm. Accuracy: $\pm .25\%$, ± 1 rpm. Update time: $\frac{1}{4}$ second.

Power switch: Membrane switch (automatic shut-off after one minute of no signal input).

Power source: 9 volt alkaline battery. Light source: Infrared with 15-foot plug-in cable.

Light holder assembly: 30 lb. rated magnet; 2" dia. x $\frac{1}{4}$ " high (4" high overall with post).

Size: $3\frac{7}{8}$ " w, 6" h x $1\frac{1}{2}$ " d.

C case: $13\frac{1}{2}$ " w, 10" h x 4" d.

cating qualities of Teflon® with a fast curing anaerobic sealant. Seals all metal fittings, plugs and threaded joints quickly and easily. Cures to form a permanent seal which is inert to hydrocarbons, most acids, chemicals, solvents and steam. Allows adjustment up to 16 hours after assembly; cannot loosen under vibration. Prevents galling of mating parts upon disassembly. Withstands temperatures from -65° F to +375° F.

No. HTS50 – Sealant, 50 ml. tube. Wt., 0.4 lb. (Teflon® is a registered trademark of duPont Co.)

HTS50



"O" RING SEAL PICKS

Even the seemingly simple job of removing and installing "O" ring seals can be difficult without the aid of the proper tool. The 7312 all metal "O" ring seal pick does

the job with ease. Two special picks in set No. 7103 get right to the trouble areas.

No. 7312 – "O" ring seal pick. Wt., 0.1 lb.

No. 7103 – Set of two "O" ring seal picks. Wt., 0.1 lb.

7312



7103



UNIVERSAL OUTSIDE THREAD CHASER

Restore damaged threads on shafts, housings, cages, etc., for re-assembly of matching parts. Eliminates need for thread-cutting equipment. Will not harm threads. V-pads and dies can be replaced. Cap. $1\frac{1}{4}$ " to 5" O.D.

No. 7402 – Thread chaser, complete (with 6 dies: threads per inch – 4, 5, 6, 7, 7 $\frac{1}{2}$, 8, 9, 10, 11, 11 $\frac{1}{2}$, 12, 14, 16, 18, 20 and 24). Wt., 4.5 lbs.

No. 202817 – Metric die set (3 dies: mm per thread: 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, and 4). Wt., 0.2 lb.

7402



MAGNETIC PICK-UP TOOL

Has permanent magnetic head for retrieving parts from otherwise inaccessible places.

No. 7395 – Pick-up tool with pocket clip. 6" lg. Wt., 0.1 lb.

7395



MECHANICAL TOOLS

WRENCHES, PRY BARS

Spanners & Jimmy Bars

RATCHETING CHAIN WRENCHES

Special head design allows you to turn wrench in either direction. Ratcheting action makes it possible to re-grip without removal. For parts of most any size and shape.

No. 7400 – Chain wrench, cap. 1/2" to 4 3/4" O.D. (Capacity= 333 ft. lbs.) Wt., 2 lbs.

No. 7401 – Chain wrench, cap. 3" to 6 3/4" O.D. (Capacity= 666 ft. lbs.) Wt., 5 lbs.

No. 209199 – Replacement chain with pin for No. 7400 chain wrench (16" long).

No. 209200 – Replacement chain with pin for No. 7401 chain wrench (24" long).

ADJUSTABLE HOOK

SPANNER WRENCH

Needed wherever turret adjusting nuts or packing gland nuts are used. Cap.: 1 1/2" to 4". Handle overall length: 19".

No. 885 – Adjustable hook spanner wrench. Wt., 3 lbs.

ADJUSTABLE HOOK SPANNER WRENCHES

Replace many fixed-size wrenches... cover range of capacities needed to service industrial tractors and other equipment. Drop-forged jaws adjust to eleven positions for a capacity of 4 3/4" to 12 3/4" O.D. Handle overall length: 24"; diameter: 1".

No. 7307 – Spanner wrench with one 3/8" thick jaw. Wt., 7.3 lbs.

No. 7308 – Spanner wrench with two interchangeable jaws: one 3/8" thick, one 3/4" thick. Wt., 11 lbs.

HEAVY-DUTY ADJUSTABLE SPANNER

Extra heavy construction. Has one 3/4" thick, eleven-position hook-jaw for a capacity of 4 3/4" to 12 3/4" O.D. Drop-forged. Handle length: 25 3/4"; handle dia.: 1 5/16".

No. 7309 – Heavy duty adjustable hook spanner wrench. Wt., 13.3 lbs.

ADJUSTABLE GLAND NUT WRENCH

Designed to handle 2" to 6" dia. hydraulic cylinder gland nuts on many construction vehicles. Fits 1/4" and 5/16" dia. pin holes; features a 3/4" sq. drive.

No. 1266 – Adjustable gland nut wrench. Wt., 3 lbs.

No. 204928 – Replacement pin for No. 1266

PRY BARS

Our rolling head pry bars are an extremely popular and useful tool. Head may be used for almost any prying job since a great deal of leverage can be obtained. Long tapered body may be used as a lining-up drift.

No. 7162 – Pry bar; 3/8" round, 6" long. Wt., .3 lb.

No. 7163 – Pry bar; 7/16" round, 12" long. Wt., .6 lb.

No. 7164 – Pry bar; 9/16" round, 16" long. Wt., 1.1 lbs.

No. 7165 – Pry bar; 3/4" round, 18" long. Wt., 2.2 lbs.

JIMMY BARS

Ideal for general lifting or prying. Heat treated chrome alloy steel to resist bending or breaking.

No. 7166 – Jimmy bar; 5/8" round, 18" long. Wt., 1.4 lbs.

No. 7167 – Jimmy bar; 3/4" round, 24" long. Wt., 2.5 lbs.

No. 7168 – Jimmy bar; 7/8" round, 30" long. Wt., 4.3 lbs.

"MAJOR PERSUADER" JIMMY BARS

Two big jimmy bars for big jobs. Forged from chrome alloy steel.

No. 7420 – Jimmy bar; 7/8" round, 46" long. Wt., 7.5 lbs.

No. 7421 – Jimmy bar; 1" round, 54" long. Wt., 11.3 lbs.

