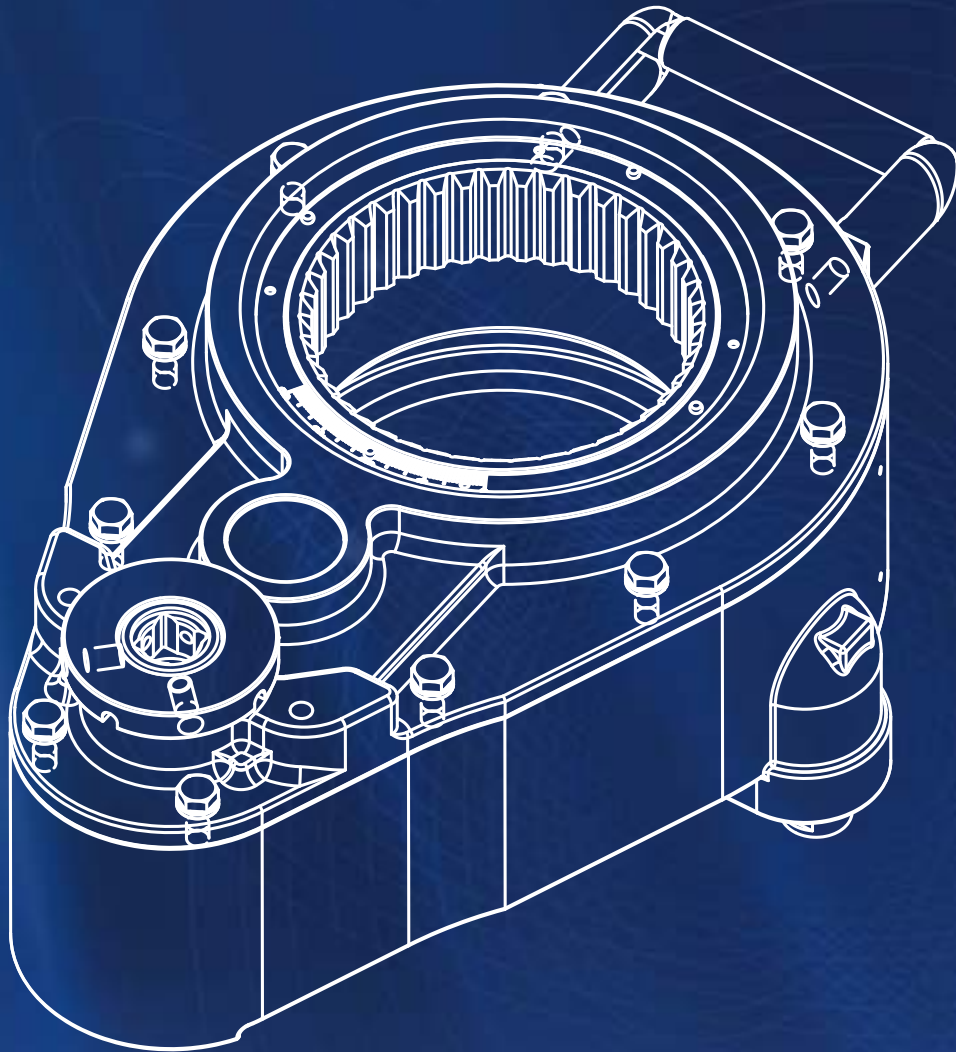


SWEENEY

AIRCRAFT AND TURBINE ENGINE MAINTENANCE TOOLS



hydratight®

Who we are

One Company, Total Support, Complete Solutions

Over many years Hydratight has provided world class bolted joint solutions and continues to set international standards in joint integrity for its customers on a global scale. By supplying a comprehensive range of products and services, supported by strong, experienced engineering teams we apply global standards through our network of local operations.

One Company

Hydratight works in partnership with the world's leading Original Equipment Manufacturers (OEMs). Using the latest computer technology and market leading development facilities, we continue to push back the boundaries of technology to provide fast, accurate and reliable solutions to critical assembly problems.

Our people are the key to our success – Hydratight's staff are qualified, competent, innovative and able to work closely with customers to ensure a total understanding of their requirements.

One Company - Total Support

Totally committed to safety and quality – all Hydratight products and services are designed, manufactured and carried out within a management system, in accordance with ISO 9001:2008 (Quality Management), ISO 14001:2004 (Environmental Management) and OHSAS 18001:2007 (Occupational Health and Safety).

Hydratight's extensive bolting and machining services include:

- Torque and tension in-situ bolting equipment
- On-site portable machining equipment
- Product sales, rental and technical support
- Product service and training
- Custom design and tool production

Our Specialist Aerospace Tools Brand

Since 1949, Hydratight, under the brand name of Sweeney, has led in the design, development and manufacture of highly specialized tools, and the handling equipment for aircraft and turbine engines' maintenance.

Sweeney is recognized as the leader in professional tooling, offering total design and production capabilities to meet customer's needs. The Sweeney brand provides solutions for any torque maintenance requirement, from a specific tool for reciprocating engine propellers to consultation, design and manufacture of an entire tool system for a new turbine engine.



Engineering Driven Safety Focused Solutions



INVESTOR IN PEOPLE

Torque Multipliers

Sweeney torque multipliers are the industry standard. For over 56 years we have set the pace for innovative products. From the 707 to the 787 and from the C-130 to the joint strike fighter, we have you covered.

Simple, Economical, Reliable

Model 8105

Specifications:	
Rated output capacity	36,000 in-lbs 3,000 ft-lbs 4,067 Nm
Power ratio	8:1
Input drive	3/4" (19 mm) square female
Output drive	Internal spline, 43 teeth 8/16 pitch
Anchor pins	1" (25 mm) diameter
Center distance	10.5" (266.7 mm)
Weight	31 lbs (14.06 kg)
Length	14.94" (379 mm)
Width	12.75" (324 mm)
Height	6" (152 mm)

NSN part number for the 8105: 5120-00-406-3037



Model 8105

Model 8200

The 8200 is the multiplier of choice for commercial and military applications up to 12,000 ft-lbs (16,262 Nm). Don't be fooled by cheap imitations. Sweeney's unique design extends the life of the tool and enables more torque to be transferred with less weight.



Specifications:	
Rated output capacity	144,000 in-lbs 12,000 ft-lbs 16,262 Nm
Power ratio	11.1:1
Input drive	3/4" (19 mm) square female
Output drive	Internal spline, 43 teeth 8/16 pitch
Anchor pins	1" (25 mm) diameter 1" (25 mm) long
Center distance	10.5" (266.7 mm)
Weight	54 lbs (24.49 kg)
Length	17.91" (432 mm)
Width	12.5" (318 mm)
Height	7.53" (178 mm)

Model 8200DS (double spline) also available
NSN part number for the 8200: 5120-00-337-9652

The model 8100 is no longer available. All 8100 torque multipliers should be replaced by the 8200.

Models 8300 and 8112

For moderate to heavy-duty torque solutions.

Model 8300

Specifications:	
Rated output capacity	360,000 in-lbs 30,000 ft-lbs 40,675 Nm
Power ratio	42:1
Input drive	3/4" (19 mm) square female
Output drive	Internal spline, 43 teeth 8/16 pitch
Anchor pins	1" (25 mm) diameter 1" (25 mm) long
Center distance	10.5" (266.7 mm)
Weight	195 lbs (88.5 kg)
Length	32.75" (832 mm)
Width	20.5" (521 mm)
Height	9.88" (251 mm)

Model 8112

Specifications:	
Rated output capacity	600,000 in-lbs 50,000 ft-lbs 67,791 Nm
Power ratio	65:1
Input drive	3/4" (19 mm) square female
Output drive	Internal spline, 43 teeth 8/16 pitch
Anchor pins	1" (25 mm) diameter 1" (25 mm) long
Center distance	15 1/4" (387.35 mm)
Weight	270 lbs (122.5 kg)
Length	34.28" (871 mm)
Width	24.19" (614 mm)
Height	10.19" (259 mm)

Model 8300 being used with 8202A air driven multiplier



Model 8300

This model is equipped with an internal brake system
NSN part number for the 8112: 5120-00-222-5001



Model 8112

Model 8111 and Torque Multiplier Accessories

The model 8111 provides the highest output torque for engine maintenance. Sweeney provides a full line of Torque Multiplier accessories that may be utilized in custom applications.

Model 8111

Specifications:	
Rated output capacity	1,000,000 in-lbs 83,333 ft-lbs 112,985 Nm
Power ratio	125:1
Input drive	3/4" (19 mm) square female
Output drive	Internal spline, 43 teeth 8/16 pitch
Anchor pins	1" (25 mm) diameter 1" (25 mm) long
Center distance	22" (558.8 mm)
Weight	395 lbs (179 kg)
Length	32.5" (826 mm)
Width	27.69" (703 mm)
Height	10.19" (259 mm)

This model is equipped with an internal brake system

Model 8111 with 8202A



Model 8111

Torque Multiplier Accessories:

81002 Sling

Used on models 8100 and 8200

81046 Adapter

Adapts splined multipliers to 2 7/8" (73 mm) female hex

86511L Socket

Allows customers to produce own sockets and power with Sweeney splined multipliers

67 Ratchet Adaptor

Input: 3/4" (19 mm) square female
Output: 3/4" (19 mm) square male

63 Work Handle

Length: telescopes from 18" to 30" (457.2 mm to 762 mm)
Output: 3/4" (19 mm) square male

53 Torque Wrench

Output: 1/2" (12.7 mm) square male
Adjustable: 30 – 250 ft-lbs (40-339Nm)



63 Work Handle



81002 Sling



67 Ratchet Adapter

Note: For manual operation in applying torque, models 53, 63 and the 67 hand tools may be used with models 8200, 8111, 8112 and the 8300.

Auxiliary Torque Multipliers

The Sweeney 8202 series provides additional multiplication to make those difficult torque procedures even easier. Input torque is reduced by an additional 6.5:1 ratio.

8202A Pneumatic Torque Multiplier

The model 8202A Air Torque Multiplier is designed to provide controlled air operation of model 8105, 8200, 8111, 8112 and 8300 torque multipliers.

Specifications:	
Maximum input air	90 psig (6.2 bar)
Output direct drive (1:1)	188 ft-lbs 255 Nm
Output reduced speed drive (6.5:1)	1225 ft-lbs 1661 Nm
Weight:	
8202-45 torque multiplier	11 lbs (5 kg)
8202-90 gearbox & airmotor	11 lbs (5 kg)
8106-90A air control kit	3 lbs (1.4 kg)
Model 8202 (total weight)	25 lbs (11.3 kg)

NSN part number for the 8202A: 5130-01-211-2188

8202-290 Mechanical Torque Multiplier

The model 8202-290 provides controlled operation of model 8105, 8200, 8111, 8112 and 8300 torque multipliers. The manually operated unit eliminates the need of reacting the input torque and holds torque through an anti-backlash device.

Specifications:	
Output direct drive (1:1)	188 ft-lbs 255 Nm
Output reduced speed drive (6.5:1)	1225 ft-lbs 1661 Nm
Weight:	
8202-45 torque multiplier	13 lbs (5.9 kg)
4600-285 Ratchet	4 lbs (1.81 kg)
Model 8202-290 (total weight)	17 lbs (7.7 kg)

NSN part number for the 8202-290: 5120-01-364-9523



Electronic Torque Multipliers



Sweeney electronic torque multipliers are compact and lightweight, and with digital read out, are designed to accurately measure output torque.

A combination of spur and planetary gears with a high overall efficiency allows these models to have low input torque requirements while producing high output torque.

All models feature:

- Microprocessor based electronic readout
- 16 character alphanumeric display
- Clockwise and counterclockwise readings
- High torque ratios
- Ratchet type backlash device
- Three scales: in-lbs, ft-lbs and Nm
- 3/8" (9.5 mm) square female input drive
- Accuracy: +/- 2% from 20% – 100% of full scale

Model 8312

Specifications:	
Rated output capacity	14,400 in-lbs 1,200 ft-lbs 1,627 Nm
Torque ratio	120:1
Output drive	3/4" (19 mm) square female
Anchor pins	1/2" (12.7 mm) diameter 39/64" (15.47 mm) length
Center distance	3" (76.2 mm)
Weight	22 lbs (10 kg)
Length	10.3" (262 mm)
Width	6.3" (160 mm)
Height	7" (178 mm)



Model 8325 in application



Model 8325

Specifications:	
Rated output capacity	30,000 in-lbs 2,500 ft-lbs 3,390 Nm
Torque ratio	192:1
Output drive	1" (25 mm) square female
Anchor pins	3/4" (19 mm) diameter 3/4" (19 mm) length
Center distance	3 3/4" (95.25 mm)
Weight	40 lbs (18.1 kg)
Length	11" (279 mm)
Width	8.5" (216 mm)
Height	7.5" (191 mm)

Model 8365

Specifications:	
Rated output capacity	78,000 in-lbs 6,500 ft-lbs 8,813 Nm
Torque ratio	365:1
Output drive	1 1/2" (38 mm) square female
Anchor pins	3/4" (19 mm) diameter 3/4" (19 mm) length
Center distance	5" (127 mm)
Weight	60 lbs (27.2 kg)
Length	12.25" (311 mm)
Width	9.5" (241 mm)
Height	8" (203 mm)

Turbine Engine Turning Tool

Digital Turning Tools

Providing a safe, controlled, cost effective way to rotate turbine engines during borescope inspection.

Features

- Borescope operator can control turbine rotation
- Automatic blade counting
- Flag blades for quick return to review
- Adjustable torque limit to 150 ft-lbs (203 Nm) – this is the most torque available from any turnover tool
- Most commercial and military engines loaded in engine library
- Motor is designed to fit all previous versions of Sweeney engine interface adapters
- Automatic/manual modes
- Variable speed and pause interval

Benefits

- Reduces inspection time
- Improves accuracy in positioning turbines for inspection. New motor control technology will allow unprecedented accuracy (0.006 degrees) in positioning blades.
- Quick set up – integrated carry case is designed to hold the unit with all the cables attached, so you can just pull out the motor/adaptor pendant and you are ready to go.
- USB port on controller allows connectivity to laptops to download inspection reports for storage or print
- Pendant is light and easy to use. It is shaped to fit in one hand or hung close by to be read by the operator.
- Torque overload sensor shuts down operation if excessive torque occurs, which can protect expensive components from damage.
- Foot control for hands-free operation

For more information, please visit www.hydratight.com/dtt



Specifications:

Total system weight	35 lbs (15.9 kg)
System container dimensions	10" x 18" x 24" (254 x 457 x 610 mm)
Power input	85 - 260 Vac 47 - 440 Hz 200 W maximum
Speed	Continuously variable from 20 degrees/min to 360 degrees/min
Direction	Bi-directional with backlash compensation adjustable by user
Torque	User selectable 30–150 ft-lbs (40.67–203 Nm)
Acceleration/ deceleration	0.2 s minimum, 5 s maximum incrementally adjustable

Pneumatic version also available



SWE 189530



SWE 18954-PC



SWE 189560



SWE 189590



SWE 189550



SWE 189540



SWE 925007

Turbine Engine Maintenance Tools

Hydratight, manufacturer of Sweeney tools, is an ISO 9000:2008 certified company with state of the art manufacturing and engineering capabilities. We manufacture a full complement of turbine engine tooling such as anchors, sockets, pushers, pullers and lifting fixtures.

When you purchase any of Sweeney's turbine engine tools, be assured that you will receive the same high quality products and support that you can expect from all Hydratight products. Our tools are always compatible or improved versions of original OEM tools that are required for overhaul and maintenance operations. We guarantee the fit, form and function of all of our tools. Full tooling catalogs and cross reference lists are available for the engines listed below:

General Electric

Engine	Model
CF6	-6, -50, -80A, -80A1, -80C2, -8A1
CFM56	-2B1, -2C, -3, -5, -7
LM2500	ALL
LM5000	ALL

Pratt & Whitney

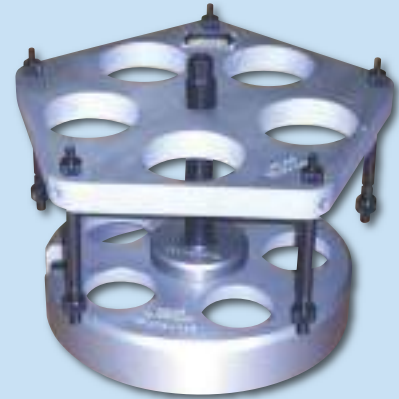
Engine	Model
JT8D	-209, -217, -219
JT9D	3A, 7, 7A, 7AH, 7F, 7H, 20, 59A, 70A, 7Q, 7R4
PW2000	ALL
PW4000	ALL
FT4/GG4	A1, C-1, C-3
F100	ALL

Rolls Royce

Engine	Model
Trent	ALL
RB211	ALL
BR700	ALL

International Aero Engines

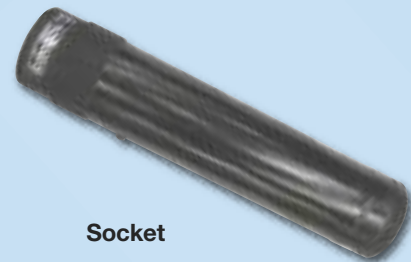
Engine	Model
V2500	ALL



Puller



Puller



Socket

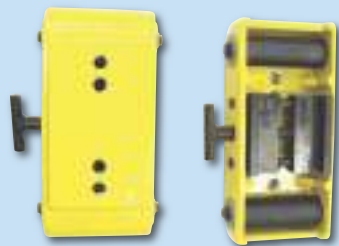
Ground Support Equipment

Helicopter Maintenance Tools

Hydratight offers Sweeney brand torque tools, anchor plates, sockets, work stands and maintenance hoists for several airframe and engine manufacturers.



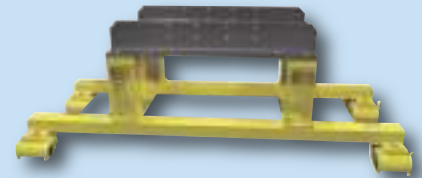
SWE 13750 Tower Hoist



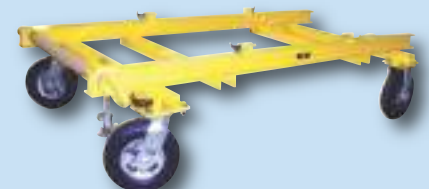
13852-404 Roller Assembly



SWE 13855B Engine Stand



13845 Engine Stand Adaptor



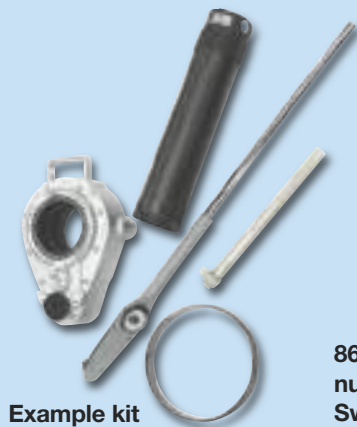
13875 Engine Stand

Propeller Handling Tools

Hydratight's Sweeney brand of propeller handling tools are used for applying the correct torque to propeller shaft retaining nuts and engine thrust bearing nuts. Complete tool sets are available including sockets, rings and a work handle to safely and correctly complete propeller assemblies. In addition, a lift assembly provides an easy and safe method for handling propellers during removal and installation. Sweeney offers kits for many propeller models including Curtiss, Hamilton Sunstrand, Aero Products and DeHavilland.



8271 Lift in use



Example kit

86072 Socket for thrust nut compatibility with Sweeney torque multipliers



843196 Spanner



84347E Nut Retainer



67 Ratchet Adaptor

Torque tools tested annually is the industry standard. Hydratight recommends sending your tools to us on an annual basis to be serviced and certified for accuracy. Service performed annually by our Sweeney aero specialists will keep your tools in top performance and in compliance. We are ISO 9001:2009 certified and offer testing capabilities of up to 100,000 ft-lbs of output torque.

Standard service includes:

- Determining 'as found' accuracy on torque tester
- Complete disassembly and cleaning of products
- Inspection of gears, bearings and seals
- Replacement of any worn or broken components and brake pads* (if equipped)
- Re-lubricating of tools and parts with engineering specified grease
- Assembling and testing for 'as left' accuracy
- Providing copies of 'as found' and 'as left' accuracy

We are dedicated to economical repair and fast turnaround. Expedited service can be requested for 2-3 day turnaround. Your tool will be diagnosed and an estimate of repair will be provided to you for your approval.

*Charges may apply.

Contact one of our authorized service centers:

USA

Hydratight, Attn: Repair,
2010 Clermont St,
Antigo, WI 54409

T: +1 800 569 6807
T: +1 715 627 5519
F: +1 715 627 5544
E: repair@hydratight.com

UK

Turbine Tools Ltd,
c/o Flightstore (Sussex) Ltd,
27-29 Cobham Way,
Gatwick Road, Crawley,
West Sussex, RH10 2RX

T: +44 (0) 134 271 6600
F: +44 (0) 134 289 0001
E: office@turbinetools.co.uk

JAPAN

Yokohama Engineering
Service Ltd,
1707-1 Saedo-cho,
Tsuzuki-Ku, Yokohama,
224-0054

T: +81 45 929 2577
F: +81 45 937 6636
E: eiji.tsunoda@yes.ecnet.jp



hydratight®

Global Standards Local Delivery

Our global network means you can rely on the right people, products and services wherever you are in the world.

Email us at: solutions@hydratight.com

Or find your local representative at:

hydratight.com/contact

