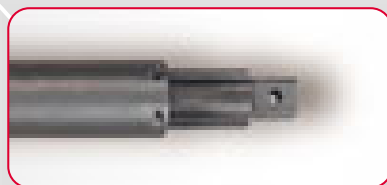


Pneumatic Torque Motors



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Contents and Torque Motor Selection

Contents




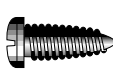

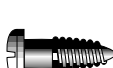





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Torque Motor Selection

Criteria

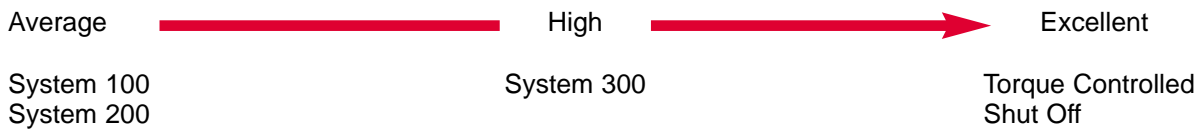
- Type of Fastener/Component
- Joint Integrity
- Torque Required

TYPE OF FASTENER/COMPONENT

Fastener/Component		Recommended Tool Type
Machine Screw/Nut		All Systems
Thread Rolling/Forming		All Systems
Self Tapping		System 100/200
Self Tapping in Plastic/Thin Materials		Torque Controlled Shut Off
Self Drilling		System 100/200
Wood Screws		System 100/200
Screws with Adhesive		System 300 with dual pressure control
Self Lock Nuts		System 300 with dual pressure control
Misaligned Holes		System 300 with dual pressure control
Variable Size Holes		System 300 with dual pressure control
Fragile Components		System 300 with 2 speed control

Torque Motor Selection

JOINT INTEGRITY



The Desoutter range of Torque Motors includes 4 options of torque control.

Torque Controlled Shut Off – 3.5 inlb - 23.6 ftlb (0.4-32 Nm)



These tools feature the Desoutter Target Tork clutch that operates a shut-off valve built into the tool. The low friction rolling action of the clutch dogs together with the synchronous air shut-off can provide torque repeatability's greater than $\pm 5\%$ depending on the joint.

System 100 – Stall Torque – 1.5-129 ftlb (2-175 Nm)



With this system the motors are controlled by regulating the air pressure.

Stall torque is the best method of torque control for the majority of joints of a non critical nature and torque repeatability of $\pm 10\%$ can be readily achieved with a consistent air supply.

System 200 – Minimum Torque Indication (MTI) – 6.6-129 ft lb (9-175 Nm)



System 200 is used where a signal is required to show that the minimum torque required has been achieved.

The motor is mounted on a caliper which incorporates a torque reaction spring of a known value. The fixed part of the caliper is bolted to the base plate of the unit whilst the motor is mounted onto the moving part of the caliper.

When the motor stalls out the caliper closes and provided the minimum torque has been achieved, closes a valve or switch. The signal can be used to provide a visual indication, signal a PLC or other ancillary equipment.

System 300 – Indicated Torque Control (ITC) – 6.6-129 ftlb (9-175 Nm)

When more accurate control of torque is required, outside the scope of stall torque, some means of motor shut-off must be used so the motors can be stopped when the torque has been achieved. Desoutter System 300 is designed to shut-off the motors when the desired torque has been reached. It uses the same caliper system as System 200, but the signal from the caliper is used to switch a shuttle valve, controlling air entry into the motor. The signal from the valve can also be used to operate other equipment.

The ITC System is not subject to error due to air pressure fluctuation as motors can operate at higher pressure settings than would be used when operating the motor under stall conditions. This also means that faster cycle times can be achieved.

Torque Controlled Shut Off – SC Series

A



PUSH START – SHUT OFF – ONE WAY

PICTURE REF	TOOL TYPE	PART NUMBER	FREE SPEED	TORQUE RANGE	FITTED SPRING	AIR FLOW	AIR HOSE BORE	AIR INLET	SOUND LEVEL	VIBRATION
			r/min	in lb	in lb	cfm	in.	NPT	dB(A)	ms ²
A	ASPC021-1A2300-S4Q	1458774	2300	3.5-18.5	3.5-7.9	14.80	1/4"	1/8"	75	<2.5
A	ASPC021-1A1600-S4Q	1458784	1600	3.5-25.6	5.3-18.5	14.80	1/4"	1/8"	75	<2.5
A	ASPC043-1A1100-S4Q	1458794	1100	3.5-37.1	7.9-37.1	14.80	1/4"	1/8"	75	<2.5
A	ASPC047-1A550-S4Q	1458804	550	3.5-39.8	7.9-39.8	14.80	1/4"	1/8"	75	<2.5

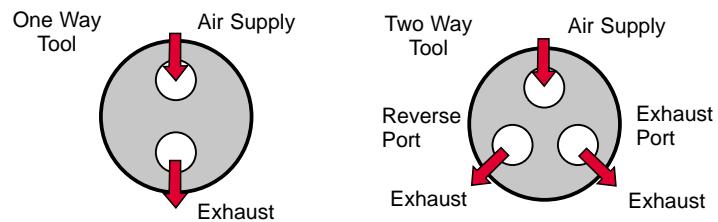
REMOTE START – SHUT OFF – TWO WAY

PICTURE REF	TOOL TYPE	PART NUMBER	FREE SPEED	TORQUE RANGE	FITTED SPRING	AIR FLOW	AIR HOSE BORE	AIR INLET	SOUND LEVEL	VIBRATION
			r/min	in lb	in lb	cfm	in.	NPT	dB(A)	ms ²
A	ASPC021-2A2300-S4Q	1458814	2300	3.5-18.5	3.5-7.9	14.80	1/4"	1/8"	75	<2.5
A	ASPC021-2A1600-S4Q	1458824	1600	3.5-26.5	5.3-18.5	14.80	1/4"	1/8"	75	<2.5
A	ASPC043-2A1100-S4Q	1458834	1100	3.5-38.0	7.9-38.0	14.80	1/4"	1/8"	75	<2.5
A	ASPC047-2A550-S4Q	1458844	550	3.5-39.8	8.8-39.8	14.80	1/4"	1/8"	75	<2.5

Pneumatic Control

Remote start tools will start as soon as air is supplied to the forward or reverse port.

Pressure tapping gives a 3 bar signal while tool is running. Signal stops when the clutch operates.

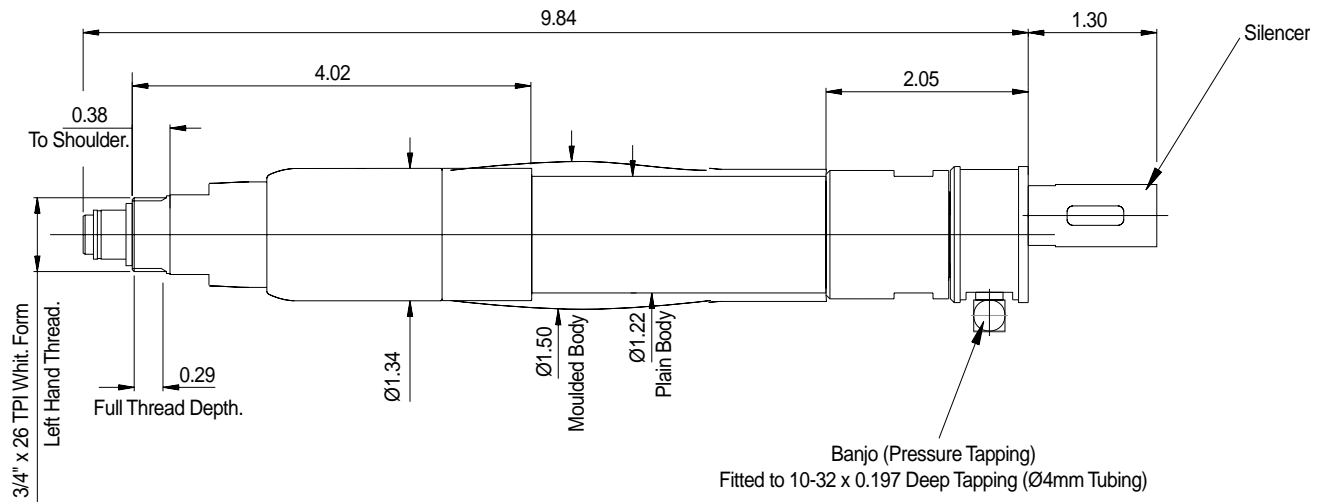


Torque Range and Spring Selection

To obtain the torque required the clutch spring may have to be changed. There are 3 spring types, white, black and natural. The torque ranges are shown in the table below:

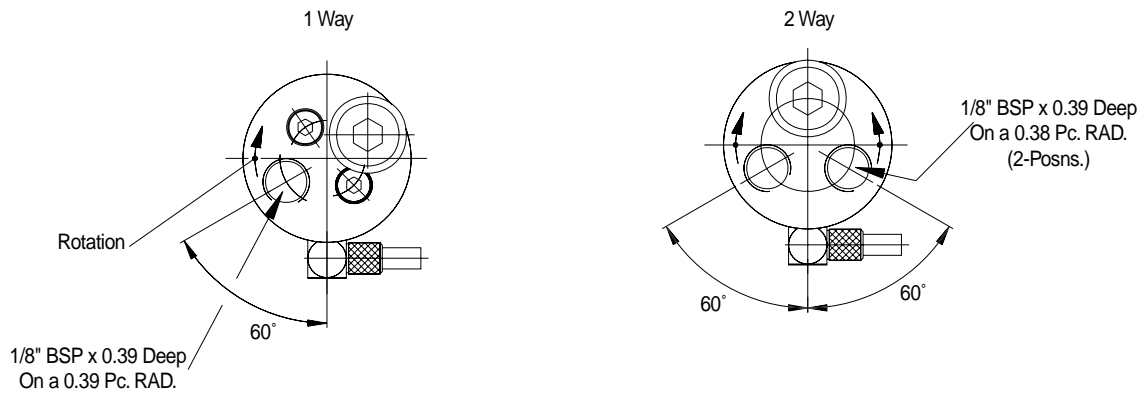
SPRING	TORQUE RANGE	TOOL TYPES
	in lb	
White	3.5-7.9	All Models
Black	5.3-17.7	ASPC047
	5.3-18.5	ASPC021
	5.3-19.5	ASPC043
Natural	8.8-25.6	ASPC021-1A1600
	8.8-26.5	ASPC021-2A1600
	7.9-37.1	ASPC043-1A1100
	7.9-38.0	ASPC043-2A1100
	7.9-39.8	ASPC047-1A550
	8.8-39.8	ASPC047-2A550

SC Series – Dimensions



1 Way tool Only Is Offered With Either Moulded Or Plain Motor Case

Weight 1.5lb (0.68kg)



All dimensions are in inches calculated from measured millimeter values

Torque Controlled Shut Off – SD Series



PUSH START – SHUT OFF – ONE WAY

PICTURE REF	TOOL TYPE	PART NUMBER	FREE SPEED	TORQUE RANGE	FITTED SPRING	AIR FLOW	AIR HOSE BORE	AIR INLET	SOUND LEVEL	VIBRATION
			r/min	in lb	in lb	cfm	in.	NPT	dB(A)	ms ²
A	SD023-1AM3500-S4Q	1464254	3500	8.9-20.4	8.9-20.4	18.40	1/4"	1/8"	73	<2.5
A	SD035-1AM2200-S4Q	1464244	2200	8.9-40.0	8.9-40.0	18.40	1/4"	1/8"	73	<2.5
A	SD055-1AM1470-S4Q	1464234	1470	17.7-48.7	17.7-48.7	18.40	1/4"	1/8"	73	<2.5
A	SD075-1AM1100-S4Q	1464224	1100	22.1-66.4	22.1-66.4	18.40	1/4"	1/8"	73	<2.5
A	SD100-1AM820-S4Q	1464214	820	31.0-88.5	31.0-88.5	18.40	1/4"	1/8"	73	<2.5
A	SD140-1AM510-S4Q	1464204	510	31.0-123.9	31.0-88.5	18.40	1/4"	1/8"	73	<2.5
A	SD160-1AM320-S4Q	1464194	320	31.0-141.6	31.0-88.5	18.40	1/4"	1/8"	73	<2.5

REMOTE START – SHUT OFF – MANUAL REVERSE

PICTURE REF	TOOL TYPE	PART NUMBER	FREE SPEED	TORQUE RANGE	FITTED SPRING	AIR FLOW	AIR HOSE BORE	AIR INLET	SOUND LEVEL	VIBRATION
			r/min	in lb	in lb	cfm	in.	NPT	dB(A)	ms ²
B	SD023-2RM3500-S4Q	1464324	3500	8.9-20.4	1.0-2.3	18.40	1/4"	1/8"	73	<2.5
B	SD035-2RM2200-S4Q	1464314	2200	8.9-40.0	1.0-3.5	18.40	1/4"	1/8"	73	<2.5
B	SD055-2RM1470-S4Q	1464304	1470	17.7-48.7	17.7-48.7	18.40	1/4"	1/8"	73	<2.5
B	SD075-2RM1100-S4Q	1464294	1100	22.1-66.4	22.1-66.4	18.40	1/4"	1/8"	73	<2.5
B	SD100-2RM820-S4Q	1464284	820	31.0-88.5	31.0-88.5	18.40	1/4"	1/8"	73	<2.5
B	SD140-2RM510-S4Q	1464274	510	31.0-123.9	31.0-88.5	18.40	1/4"	1/8"	73	<2.5
B	SD160-2RM320-S4Q	1464264	320	31.0-141.6	31.0-88.5	18.40	1/4"	1/8"	73	<2.5

Pneumatic Control

Both tools produce signals for interfacing with other equipment.

10-32 Port provides signal while tool is running. The signal stops when the clutch operates.



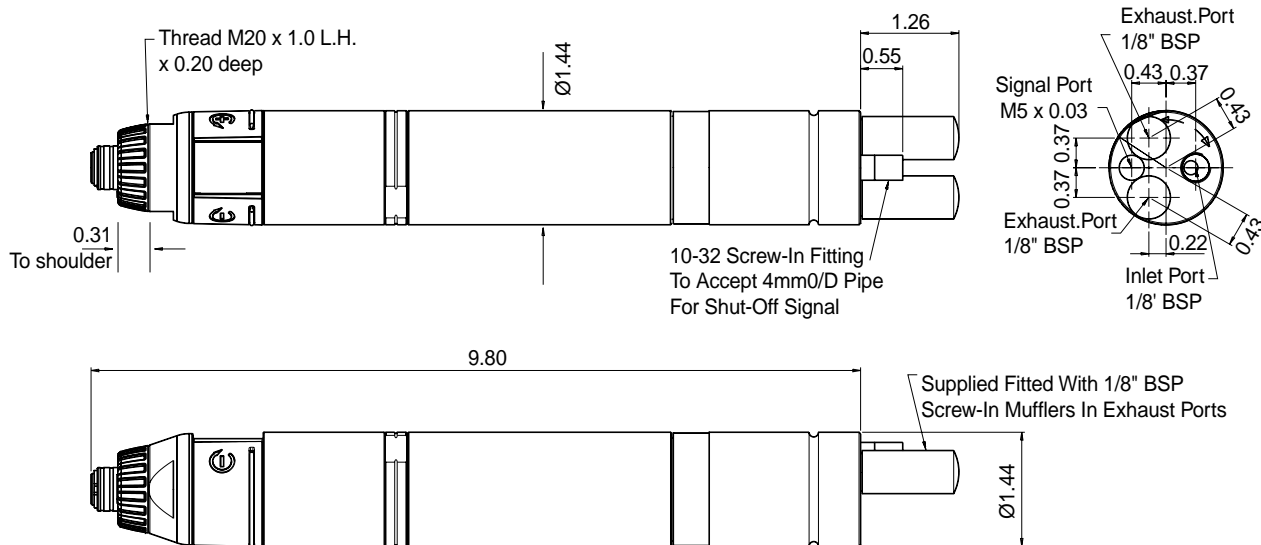
Torque Range and Spring Selection

The majority of the SD Series uses one spring to cover the entire torque range. The 320 and 510 r/min tools use two springs as per below.

SPRING	TOOL SPEED	
	510	320
465763	31.0-88.5	31.0-88.5
465753	66.4-123.9	66.4-141.6

SD Series – Dimensions

SD-1AM

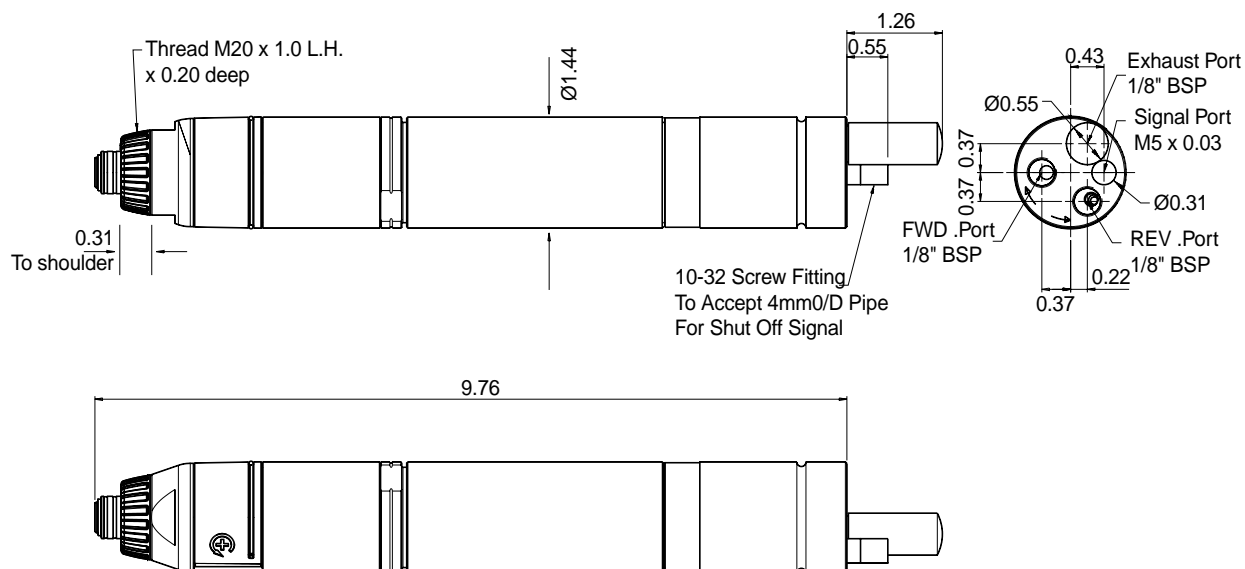


Weights

1AM (320, 510, 820, 1100 & 1470rpm) = 2.02lb (0.92kg)

1AM (2200 & 3500 rpm) = 1.67lb (0.76kg)

SD-2RM



All dimensions are in inches calculated from measured millimeter values

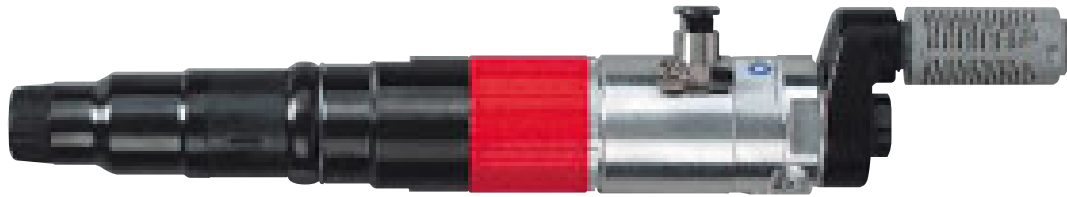
Weights

2RM (320, 510, 820, 1100 & 1470rpm) = 2.02lb (0.92kg)

2RM (2200 & 3500 rpm) = 1.67lb (0.76kg)

Torque Controlled Shut Off – F Series

A



B



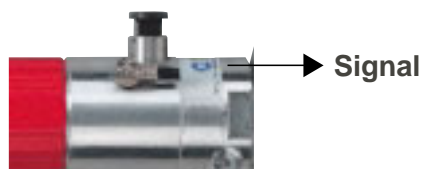
PUSH START – SHUT OFF – MANUAL REVERSE

PICTURE REF	TOOL TYPE	PART NUMBER	FREE SPEED	TORQUE RANGE	FITTED SPRING	AIR FLOW	AIR HOSE BORE	AIR INLET	SOUND LEVEL	VIBRATION
			r/min	ft lb	ft lb	cfm	in.	NPT	dB(A)	ms ²
A	2F89-AX-900	1462594	900	2.1-6.2	2.1-6.2	21.2	3/8"	1/4"	76	<2.5
A	2F89-AX-630	1462584	630	2.6-8.8	2.6-8.8	21.2	3/8"	1/4"	76	<2.5
B	2F89-AX-260	1462574	260	7.7-23.6	16.2-23.6	21.2	3/8"	1/4"	76	<2.5

Outputs – 630/900rpm, 1/4" hex
– 260rpm, 3/8" square

Pneumatic Control

The 2F89 tools produce a signal while the tool is running for interfacing with other equipment. The signal stops when the clutch operates.

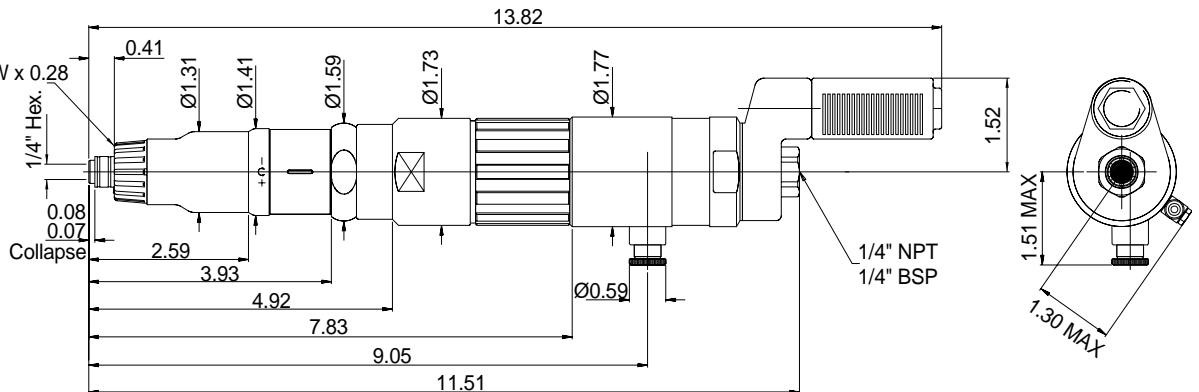


F Series – Dimensions

2F89-AX-630/900

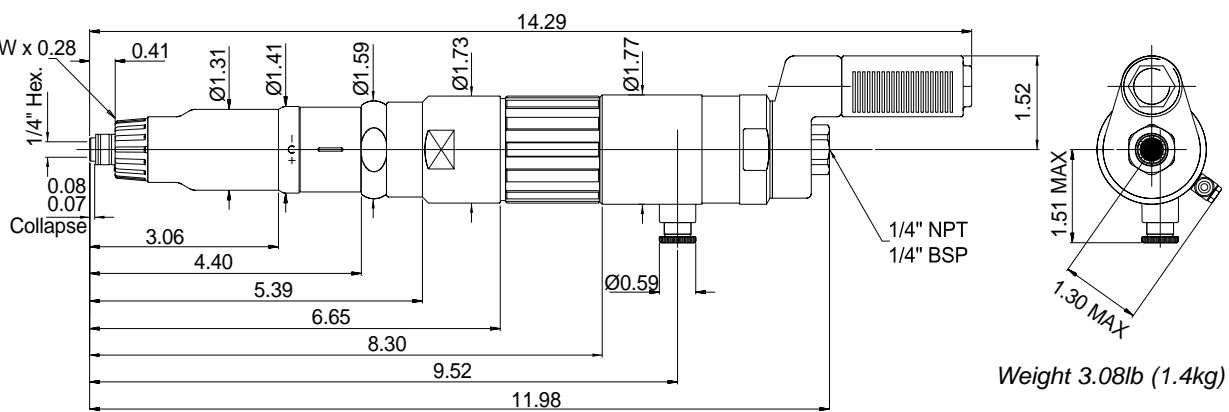
900 r/min

7/8" .26.LH BSW x 0.28



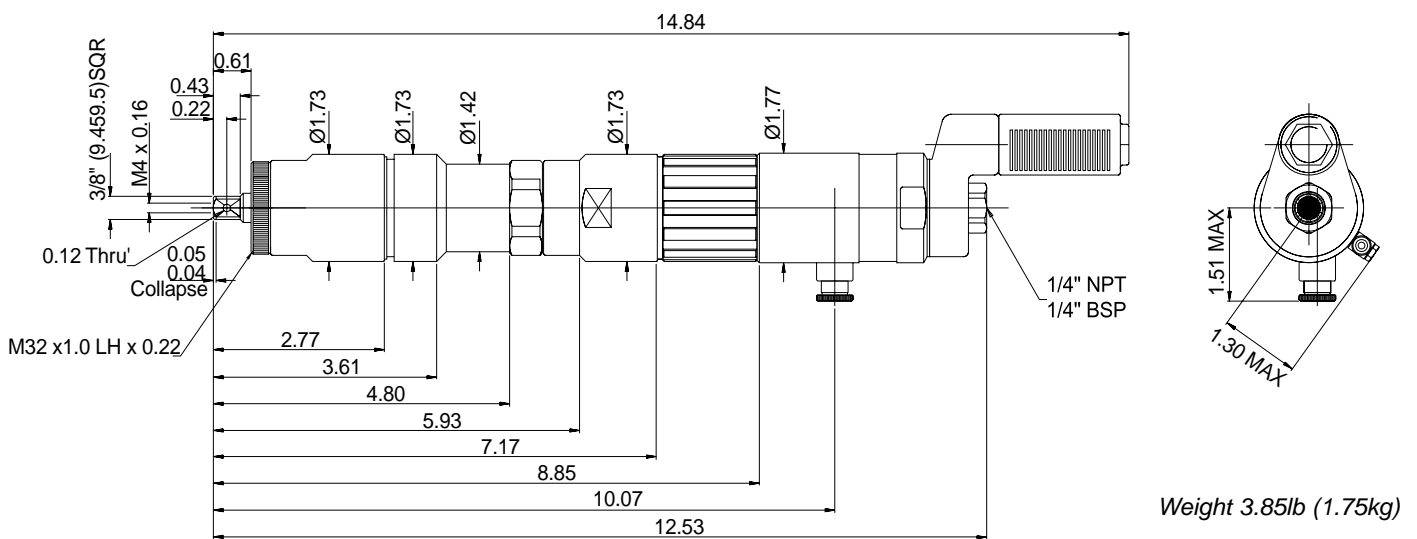
630 r/min

7/8" .26.LH BSW x 0.28



Weight 3.08lb (1.4kg)



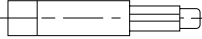
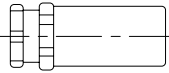

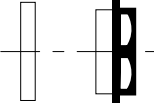

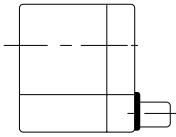
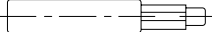

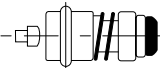
2F89-AX-260



Weight 3.85lb (1.75kg)

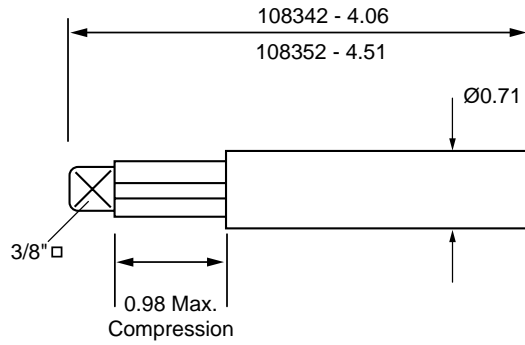
All dimensions are in inches calculated from measured millimeter values

Torque Controlled Shut Off – Accessories

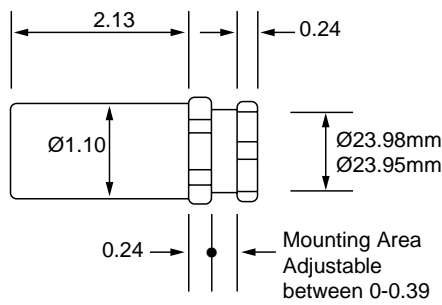
Accessories	ITEM	SC SERIES	SD SERIES	F SERIES
Spring Loaded Shafts and Bearing Supports  Provides a rigid output drive and mounting for use in single or multi spindle assembly units.		103782	103782	103782
		108342	108342	108342
		103742	108412	103752
Nose Mounts  Mounting to allow torque motors to be mounted squarely on a plate (not required if a bearing support is used).		103722	108392	103732
Offset Heads  Offset head and output spindle for applications with close centres (minimum 0.748" (19mm)).		384993	384993	–
		108352	108352	–
Screwdriver Bit Adaptor  Quick release bit adaptor for use with the output shafts above. Provides a 1/4" hex output.		108322	108322	108322

Torque Controlled Shut Off – Accessories

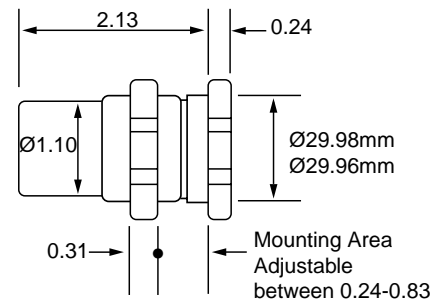
**108342/
108352**



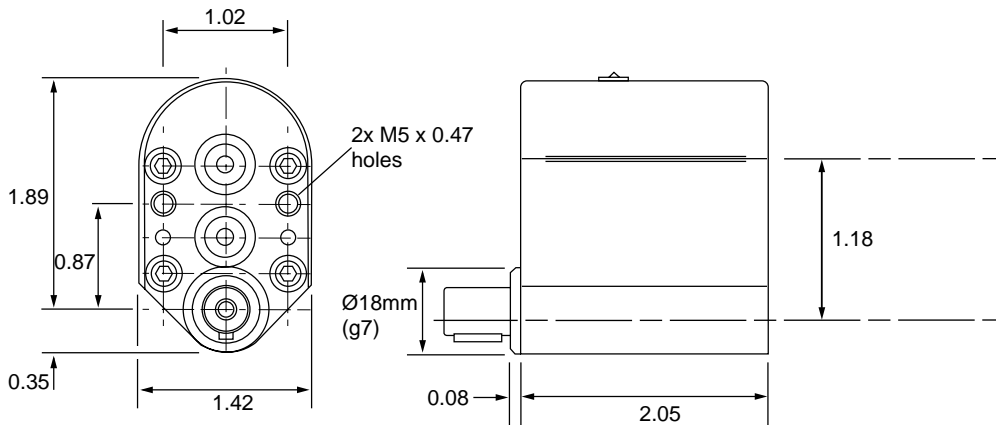
130742/108412



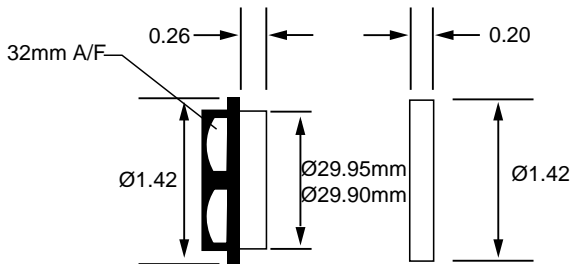
103752



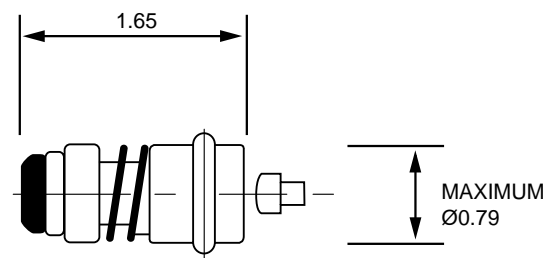
384993



103722/103732/108392



108322



All dimensions are in inches calculated from measured millimeter values unless otherwise stated

System 100 – DM Series



SPECIFICATION

PIC REF	TOOL TYPE	MOTOR ROTATION	AIR FLOW AT 6.3 BAR	AIR HOSE BORE	SOUND LEVEL	VIBRATION
			cfm	in.	dB(A)	ms ²
A	DM6	One Way	19.90	3/8"	76	<2.5
B	2DM6	Two Way	19.90	3/8"	73	<2.5

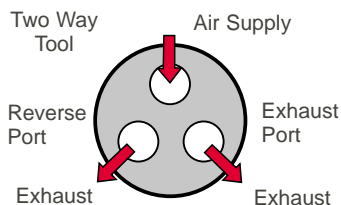
TORQUES (ft lb)

AIR PRESSURE		FREE SPEED				
bar	psi	290	390	620	980	1650
6	87	–	–	–	7.67	4.50
5	75	–	–	–	6.42	3.76
4	58	–	–	8.48	5.16	3.02
3	43	–	8.85	6.12	3.91	2.21
2	29	6.64	5.90	4.06	2.58	1.48

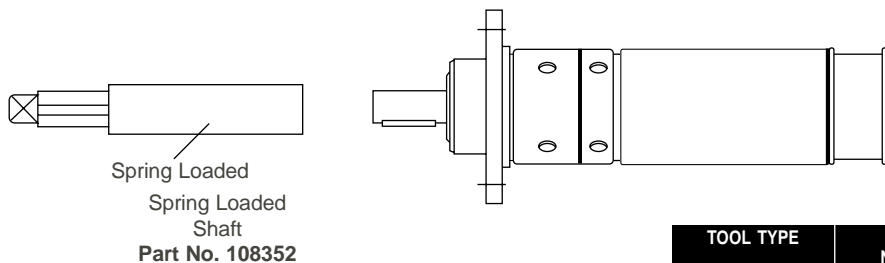
Maximum stall torque 8.9 ftlb
 Data obtained from a lubricated air line
 Torque figures are to be used as a guide only

Pneumatic Control

Tools will start as soon as air is supplied to the forward or reverse port.



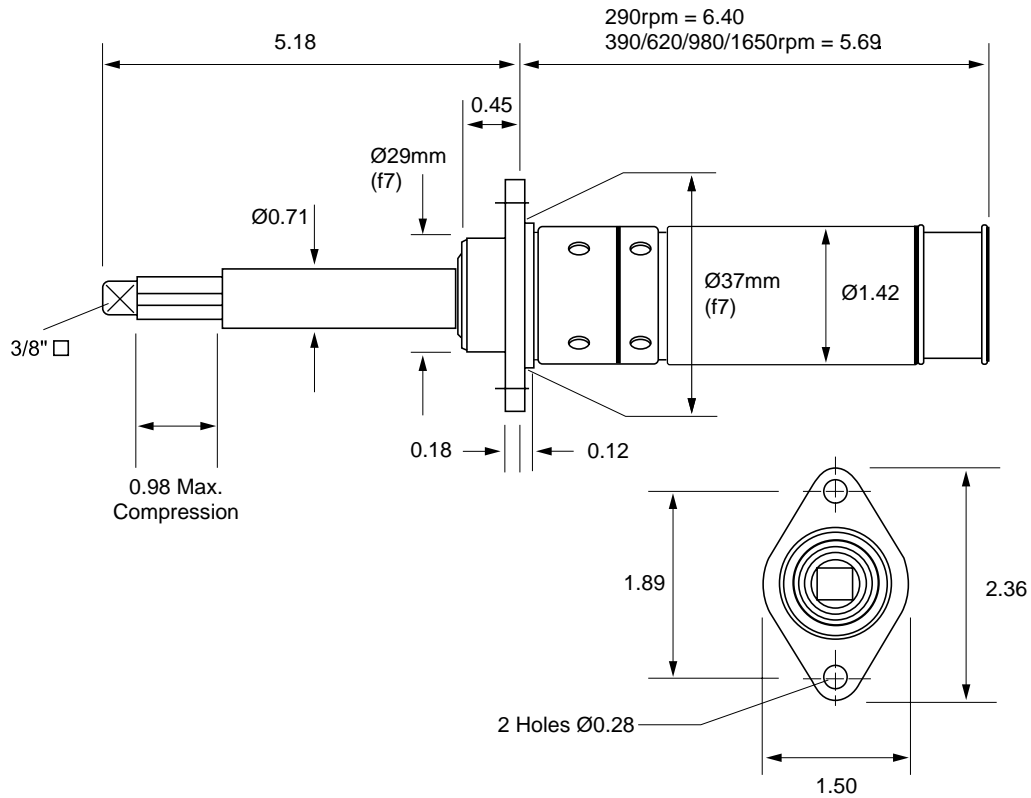
HOW TO ORDER



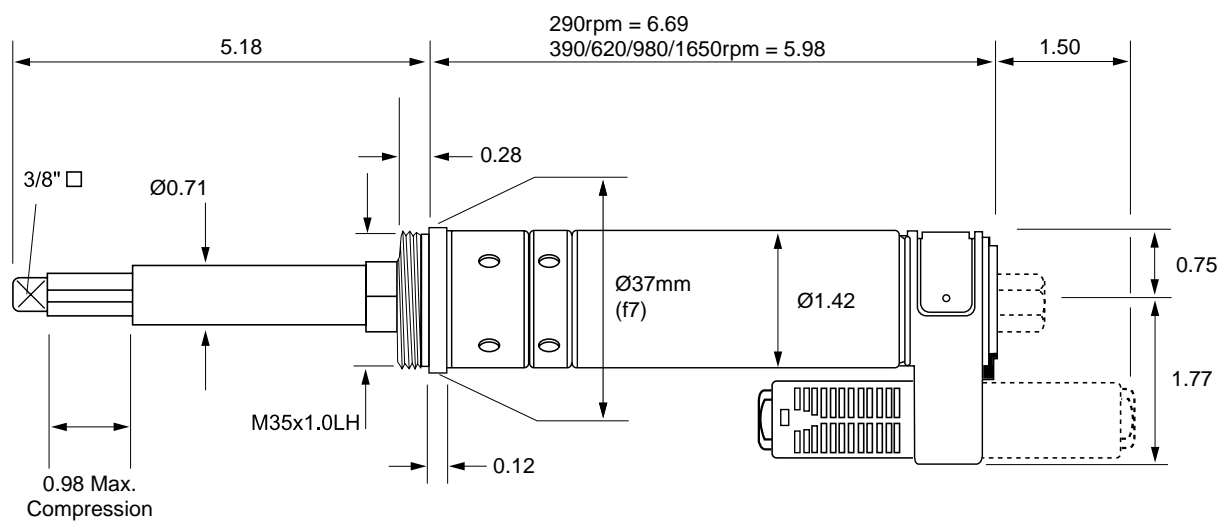
TOOL TYPE	PART NUMBER	TOOL TYPE	PART NUMBER
DM6-290T	1454214	2DM6-290	1414164
DM6-390T	1454204	2DM6-390	1414244
DM6-620T	1454194	2DM6-620	1413774
DM6-980T	1454184	2DM6-980	1414084
DM6-1650T	1454304	2DM6-1650	1416604

DM Series – Dimensions

2DM6



DM6



All dimensions are in inches calculated from measured millimeter values unless otherwise stated

System 100 – HM Series

A

B

REMOTE START – TWO WAY SPECIFICATION

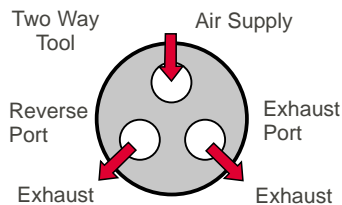
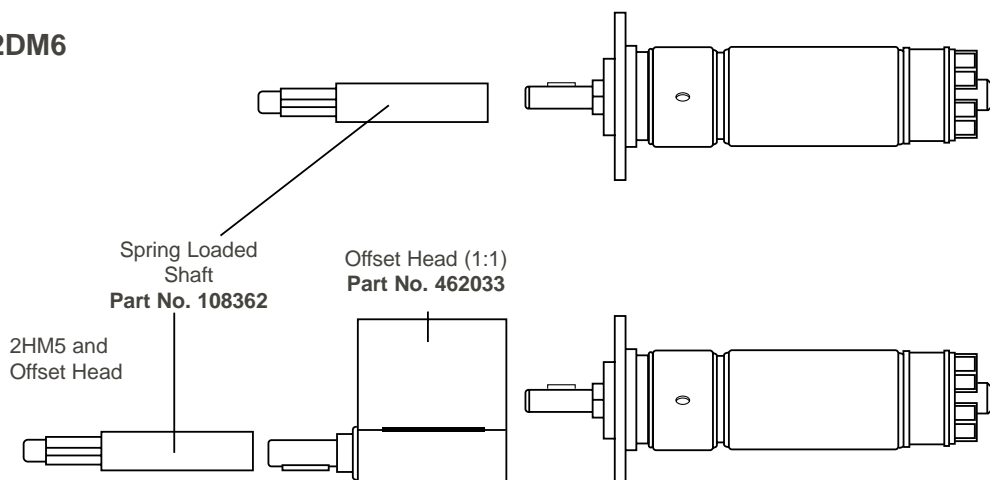
PIC REF	TOOL TYPE	AIR FLOW AT 6.3 BAR	AIR HOSE BORE	SOUND LEVEL	SOUND POWER LEVEL	VIBRATION
		cfm	in.	dB(A)	dB(A)	ms ⁻²
A	2HM5	35.0	3/8"	89	100	<2.5
B	2HM5 with Offset Head	35.0	3/8"	89	100	<2.5

REMOTE START – TWO WAY TORQUES (ft lb)

AIR PRESSURE		FREE SPEED			
bar	psi	150	350	550	950
6	87	–	–	30.24	18.44
5	75	–	36.88	24.34	15.49
4	58	–	29.50	19.18	11.80
3	43	–	22.13	14.75	8.85
2	29	36.88	15.49	10.33	6.64

Maximum stall torque 37.6 ftlb
Data obtained from a lubricated air line
Torque figures are to be used as a guide only
Pneumatic Control

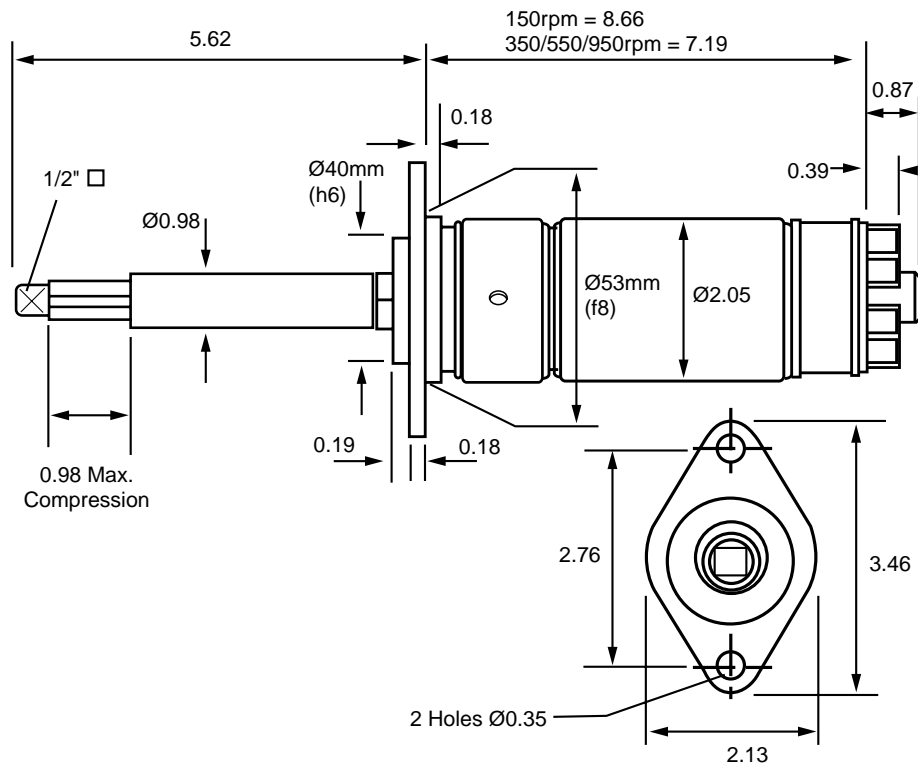
Tools will start as soon as air is supplied to the forward or reverse port.


HOW TO ORDER
2DM6


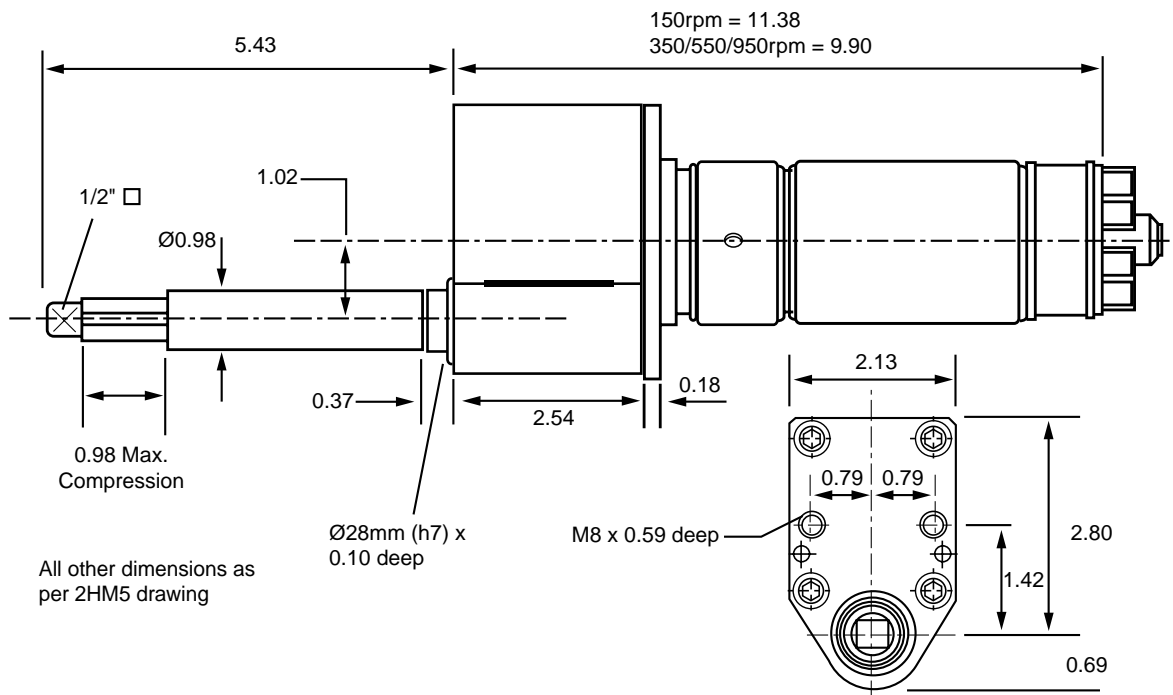
TOOL TYPE	PART NUMBER
2HM5-150	1309284
2HM5-350	1309444
2HM5-550	1309524
2HM5-950	1309604

HM Series – Dimensions

2HM5



2HM5 and Offset Head



All dimensions are in inches calculated from measured millimeter values unless otherwise stated

System 100 – 2HM5-HT Series

A


REMOTE START – TWO WAY

PICTURE REF	TOOL TYPE	PART NUMBER	FREE SPEED ⁽¹⁾	TORQUE RANGE	AIR FLOW ⁽¹⁾	AIR HOSE BORE	AIR INLET	SOUND LEVEL	SOUND POWER LEVEL	VIBRATION
			r/min	ft lb	cfm	in.	NPT	dB(A)	dB(A)	ms ⁻²
A	2HM5-HT-230	1462654	230	22-62	35.0	3/8"	1/4"	89	100	<2.5
A	2HM5-HT-130	1462644	130	36-103	35.0	3/8"	1/4"	89	100	<2.5
A	2HM5-HT-80	1462634	80	55-129	35.0	3/8"	1/4"	89	100	<2.5

⁽¹⁾ Values taken at 6.3 bar inlet pressure

TORQUES (ft lb)

AIR PRESSURE		FREE SPEED		
bar	psi	80	130	230
6	87	–	103.26	62.69
5	75	125.39	84.82	51.63
4	58	99.57	66.38	40.57
3	43	73.76	51.63	33.19
2	29	55.32	36.88	22.13

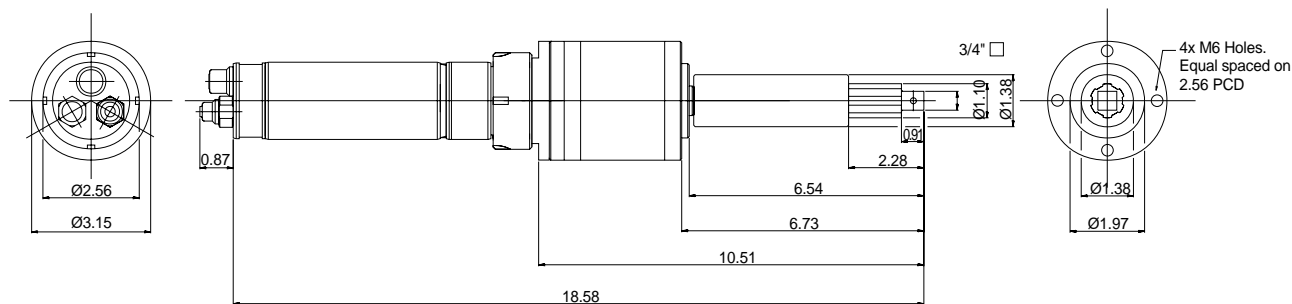
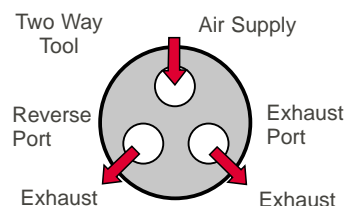
Maximum stall torque 129 ftlb

Data obtained from a lubricated air line

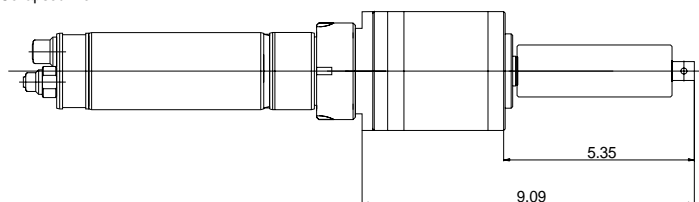
Torque figures are to be used as a guide only

Pneumatic Control

Tools will start as soon as air is supplied to the forward or reverse port.



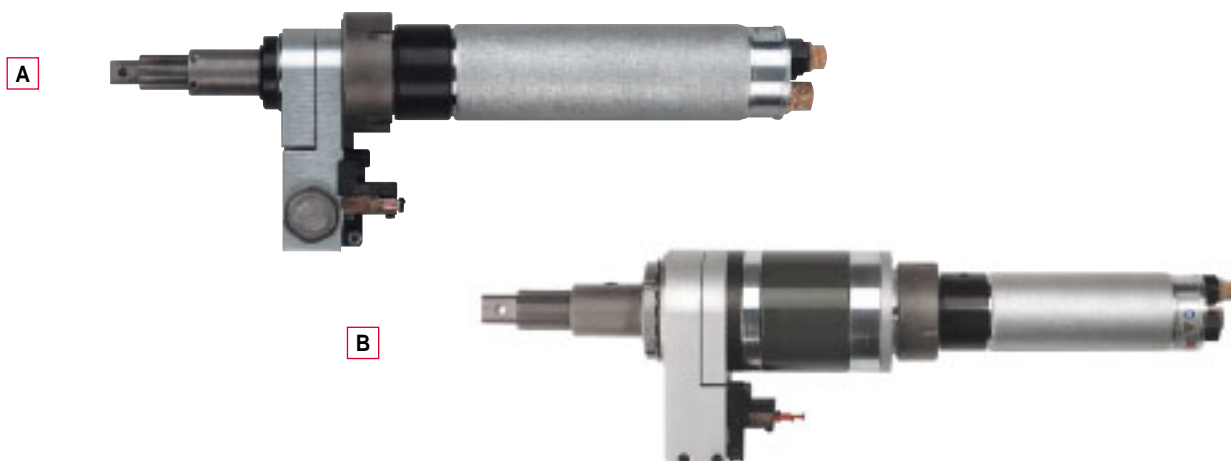
Collapsed View



Weight 12.54lb (5.7kg)

All dimensions are in inches calculated from measured millimeter values unless otherwise stated

System 200/300 – 2HM5-MT/ITC



REMOTE START – ONE WAY

PICTURE REF	TOOL TYPE	PART NUMBER	FREE SPEED ⁽¹⁾	TORQUE RANGE	AIR FLOW ⁽¹⁾	AIR HOSE BORE	AIR INLET	SOUND LEVEL	SOUND POWER LEVEL	VIBRATION
			r/min	ft lb	cfm	in.	NPT	dB(A)	dB(A)	ms ⁻²
A	2HM5-550-MT/ITC	1462624	550	11.1-30.2	35.0	3/8"	1/4"	89	100	<2.5
A	2HM5-350-MT/ITC	1462614	350	15.5-37.6	35.0	3/8"	1/4"	89	100	<2.5
A	2HM5-150-MT/ITC	1462604	150	33.2-37.6	35.0	3/8"	1/4"	89	100	<2.5
B	2HM5-HT-230-MT/ITC	1462684	230	22.0-62.0	35.0	3/8"	1/4"	89	100	<2.5
B	2HM5-HT-130-MT/ITC	1462674	130	36.0-103.0	35.0	3/8"	1/4"	89	100	<2.5
B	2HM5-HT-80-MT/ITC	1462664	80	55.0-129.0	35.0	3/8"	1/4"	89	100	<2.5

⁽¹⁾ Values taken at 6.3 bar inlet pressure

2HM5 TORQUES (ft lb)

AIR PRESSURE		FREE SPEED		
bar	psi	150	350	550
6	87	–	–	30.24
5	75	–	36.88	24.34
4	58	–	29.50	19.18
3	43	–	22.13	14.75
2	29	36.88	15.49	10.33

2HM5-HT TORQUES (ft lb)

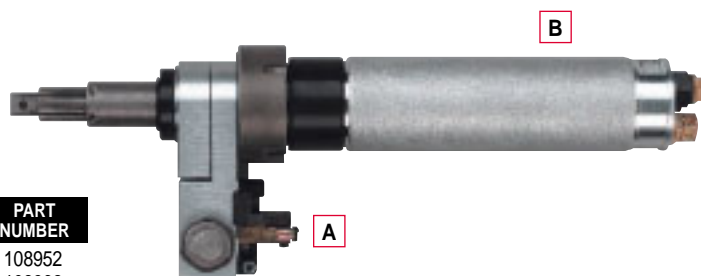
AIR PRESSURE		FREE SPEED		
bar	psi	80	130	230
6	87	–	103.26	62.69
5	75	125.39	84.82	51.63
4	58	99.57	66.38	40.57
3	43	73.76	51.63	33.19
2	29	55.32	36.88	22.13

Maximum stall torque 37.6 ftlb

Data obtained from a lubricated air line
Torque figures are to be used as a guide only

Maximum stall torque 129 ftlb

HOW TO ORDER



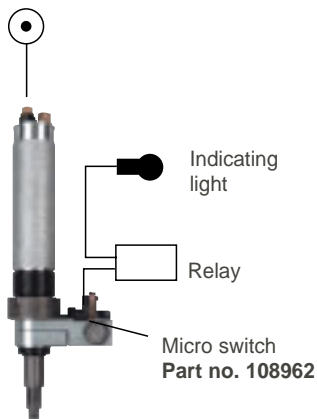
PICTURE REF	SWITCH/VALVE	PART NUMBER
A	Pneumatic	108952
A	Electric	108962

PICTURE REF	TOOL TYPE	PART NUMBER
B	2HM5-550-MT/ITC	1462624
B	2HM5-350-MT/ITC	1462614
B	2HM5-150-MT/ITC	1462604
B	2HM5-HT-230-MT/ITC	1462684
B	2HM5-HT-130-MT/ITC	1462674
B	2HM5-HT-80-MT/ITC	1462664

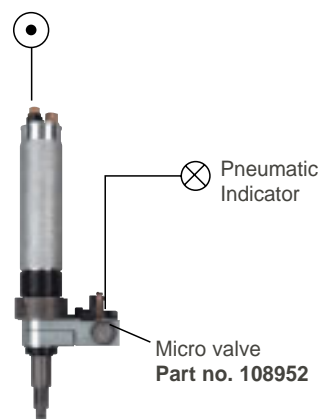
System 200/300 – Control Circuits

SYSTEM 200

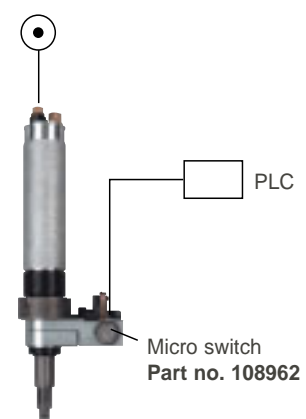
Indicating Light



Pneumatic Indicator

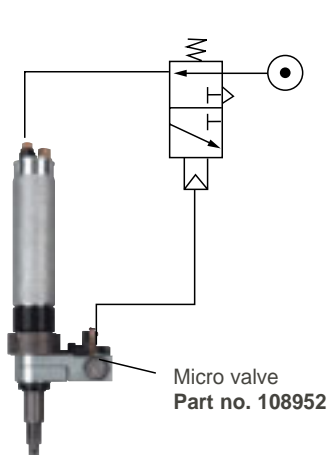


Signal to PLC

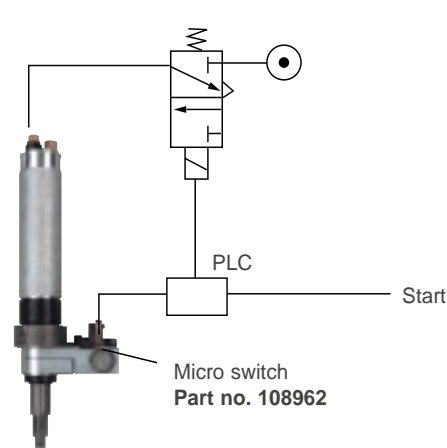


SYSTEM 300

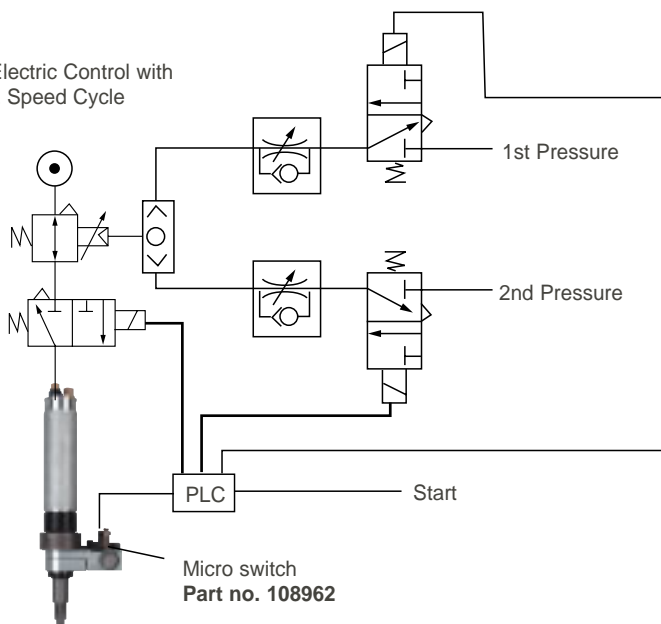
Pneumatic Control



Electric Control



Electric Control with
2 Speed Cycle

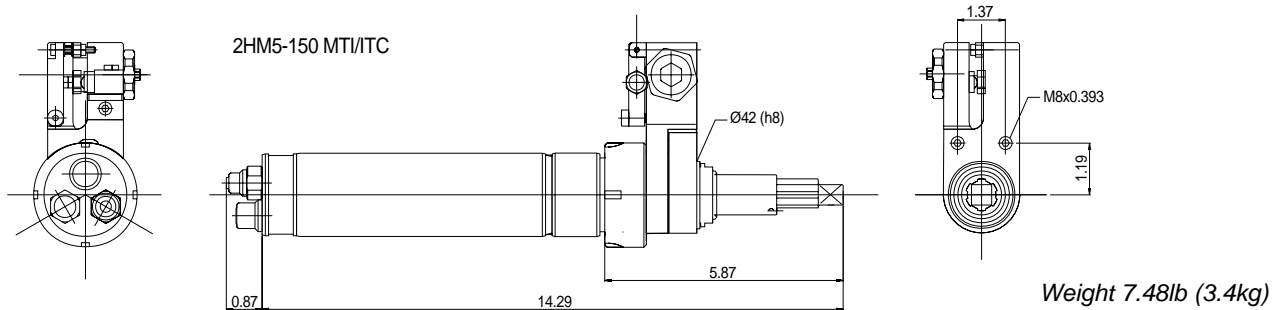
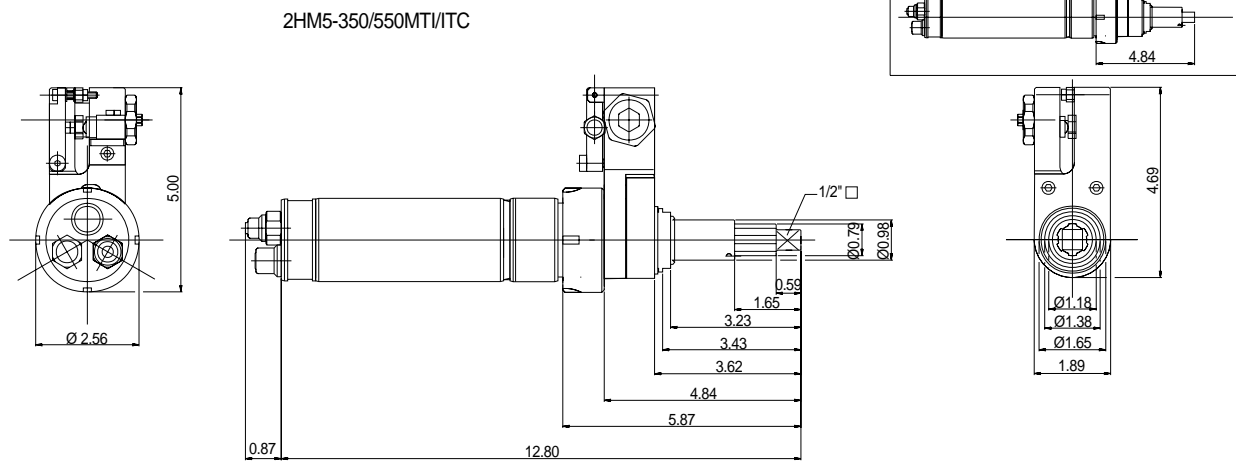


Notes:

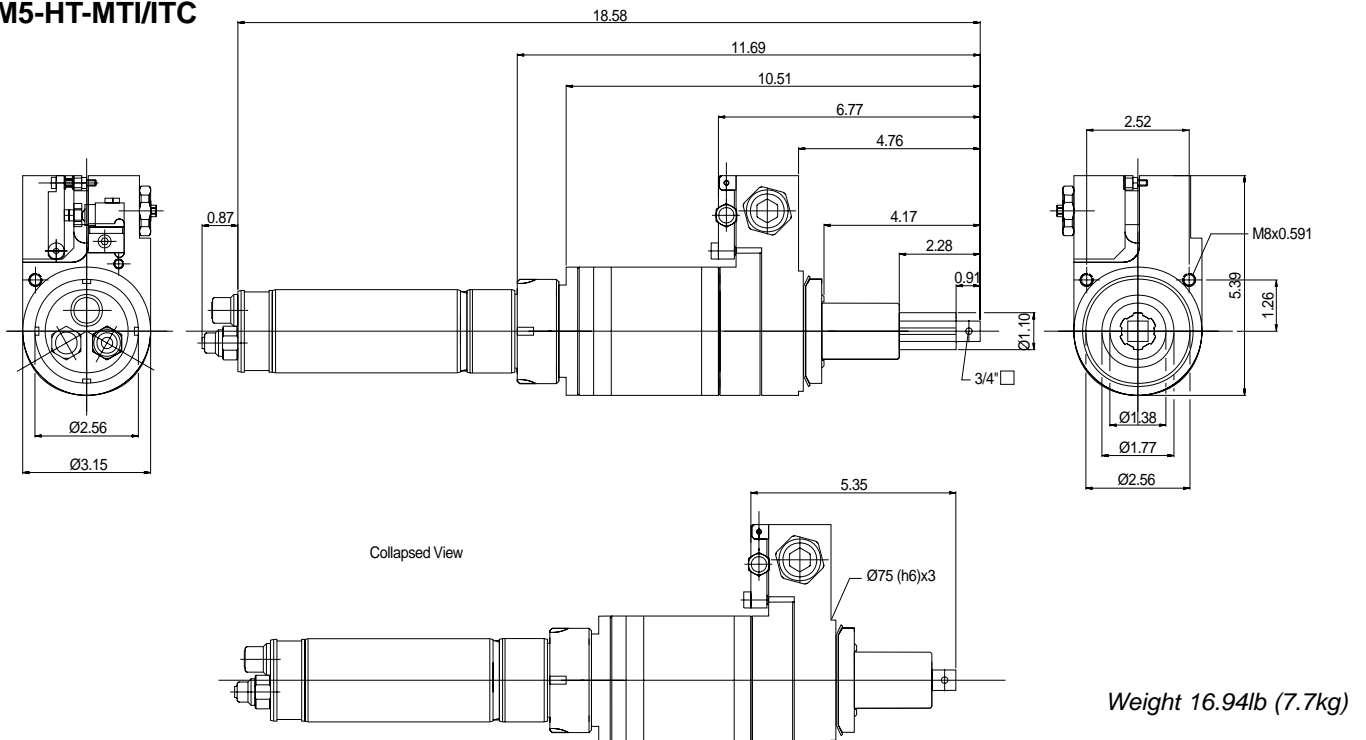
- Ensure that any valves and tubing used with the torque motors have the appropriate air flow rating.
- Avoid using pneumatic lubricating oil in any control circuit.
- For high torques, it may be necessary to introduce a short pulse (<1 sec) of low pressure (<2 bar) air onto the reverse port to permit the socket to disengage from the fastener.

2HM5-MT/ITC Series – Dimensions

2HM5-MT/ITC



2HM5-HT-MT/ITC



All dimensions are in inches calculated from measured millimeter values unless otherwise stated

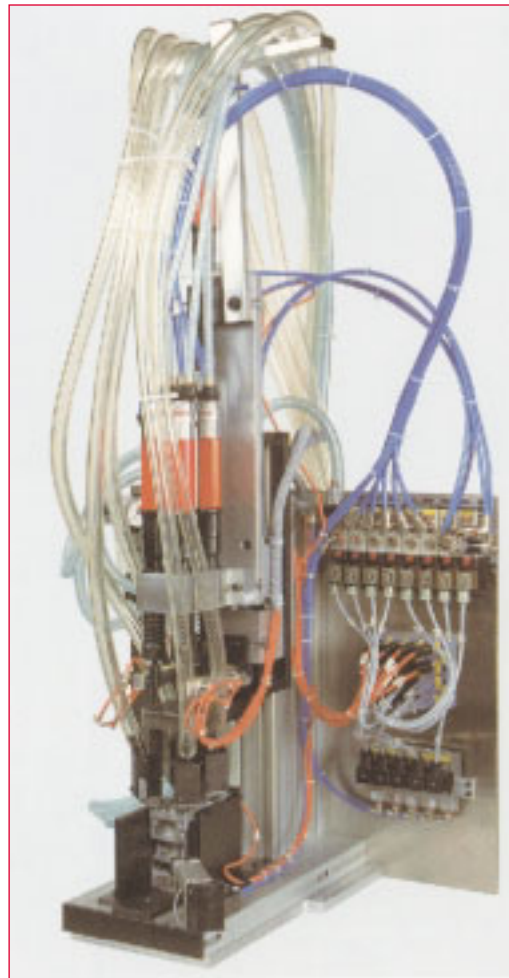
Screwfeeding Systems



For applications where productivity is of importance the use of a screwfeeder can dramatically reduce the fastening cycle time.

The range of Desoutter Screw Feeding Systems are capable of operation with hand operated and fixtured tools.

Ask for further details from your local sales contact.

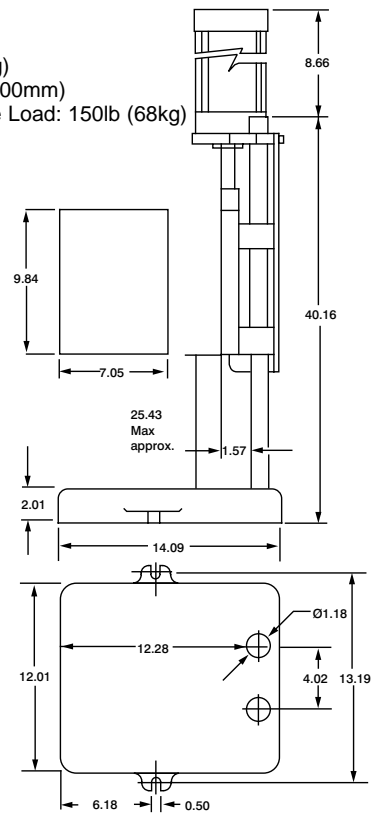


Stands



MC55 Cylinder-Operated Stand With Linear Bearings

Part No. 902914
 Weight: 70.4lb (32kg)
 Max. Stroke: 4 in. (100mm)
 Max. Mounting Plate Load: 150lb (68kg)

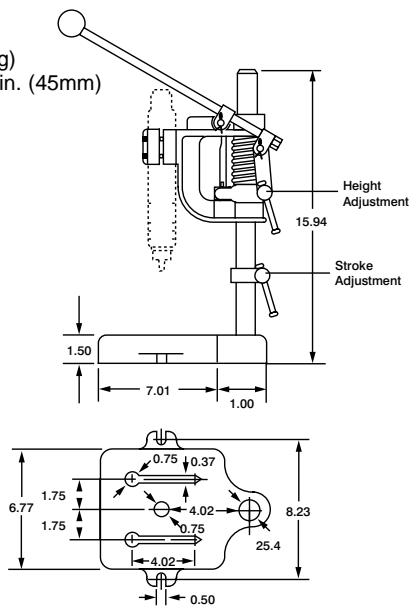


Lever operated version of the MC55 is available upon request.

Mounting Brackets can be made to order for the R55-S and MC55.

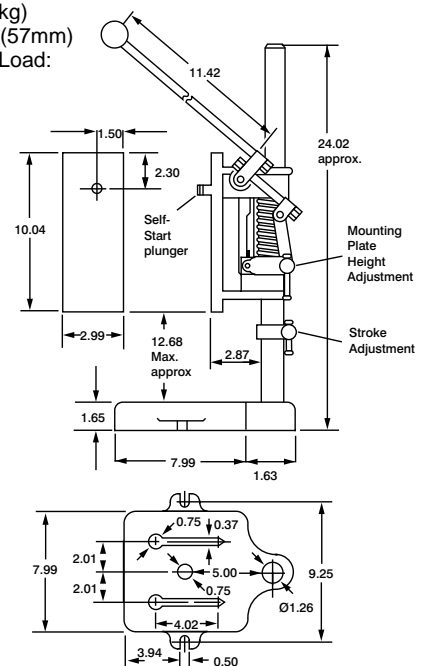
D54 Lever-Operated Stand For SD, DM6, 2DM6 Motors

Part No. 901944
 Weight: 15.4lb (7kg)
 Max. Stroke: 1.77 in. (45mm)



R55-S Lever-Operated Stand

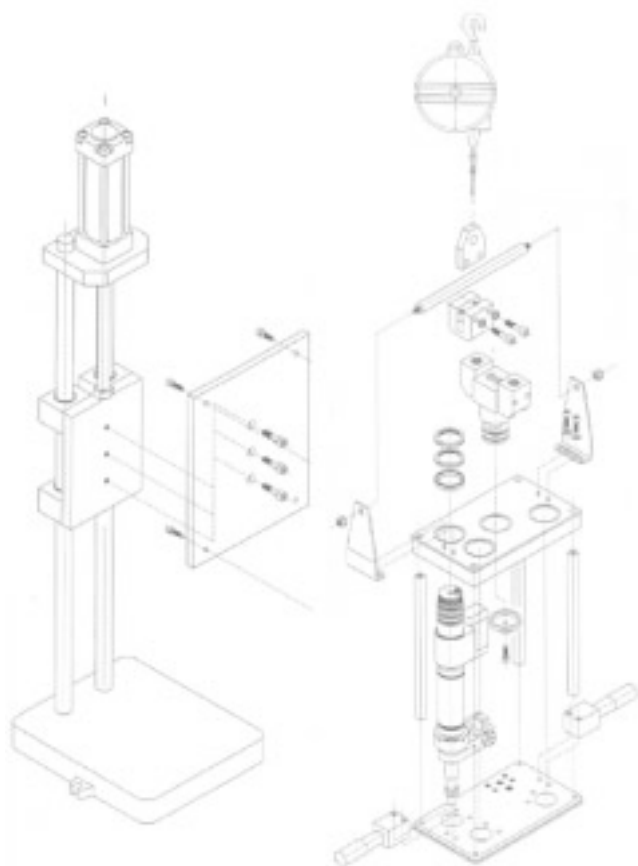
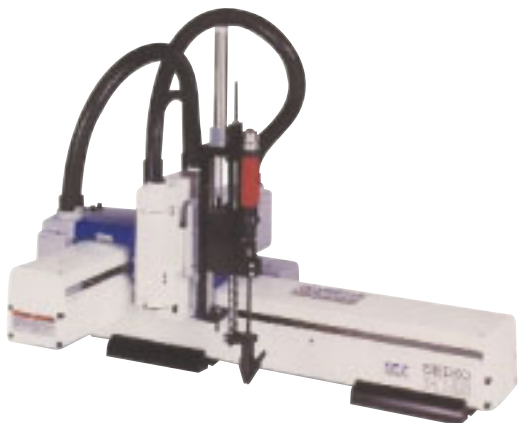
Part No. 903644
 Weight: 24.9lb (11.32kg)
 Max. Stroke: 2.24 in. (57mm)
 Max. Mounting Plate Load: 13.2lb (6kg)



All dimensions are in inches calculated from measured millimeter values unless otherwise stated

Slide Feed Units and Multiple Units

The Desoutter range also includes pneumatic slide feed units for automated assembly. The units can be manufactured to suit the application.



Desoutter can supply complete multiple spindle units to suit your application or supply kits of parts for assembly.

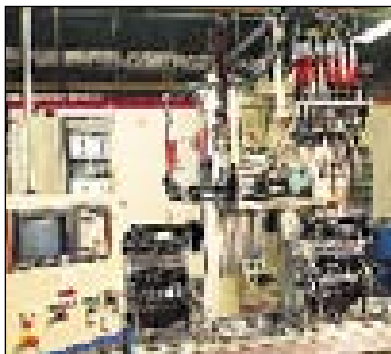
To discuss your assembly application please contact your local Desoutter technical support engineer.

Other Assembly and Automation Products

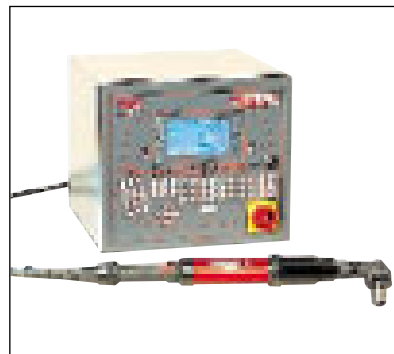
Fastening Tools



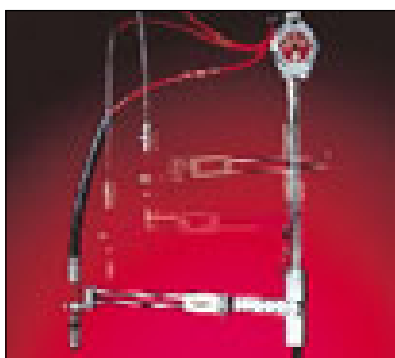
Assembly Systems



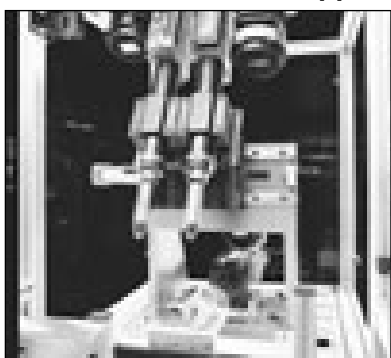
Electric Nutrunners



Installation Accessories



Auto Feed Drills and Tappers



Pneumatic Motors



General Safety Instructions for the Operation of Power Tools

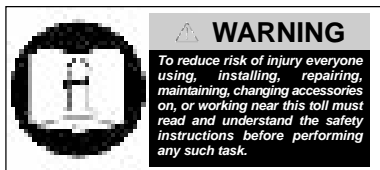
The goal of Desoutter is to produce tools that help the operator work safely and efficiently.

The most important safety device for this or any other tool is the operator. Care and good judgement are the best protection against injury.

All possible hazards cannot be covered here, but we have tried to highlight some of the important ones.

Individuals should look for and obey Caution, Warning and Danger signs placed on tools, and displayed in the workplace. Operators should read and follow safety instructions packed with each tool. For a copy of these instructions, contact your local Desoutter representative.

Learn how each tool works. Even if you have previously used similar tools, carefully check out each tool before you use it. Get the 'feel' of it and know its capabilities, limitations, potential hazards, how it operates and how it stops.



All tools are designed to operate at a line pressure of 6.3 bar +/- 0.15bar in accordance with ISO2787.

Sound levels +/- 3dB(A)* measured in accordance with CAGI-PNEUROF test code. Vibration values* measured in accordance with ISO 8662.

*These declared values were obtained by laboratory testing in compliance with stated standards and are not adequate for risk assessments. Values measured in individual work places may be higher than the declared values. The actual exposure values and risk of harm experienced by an individual are unique and depend upon the way the user works, the workpiece and the work station design, as well as upon the exposure time and the physical condition of the user. We Desoutter cannot be held liable for the consequences of using declared values, instead of values reflecting the actual exposure, in an individual risk assessment in a work place situation over which we have no control.

All product in this catalogue is classified as "machinery to be incorporated" in accordance with the European Machinery Directive.

Specifications subject to change without prior notice.

Further occupational health and safety information can be obtained from the following web sites
<http://www.osha.gov> (USA)
<http://europe.osha.eu.int> (Europe).



Compressed Air Hazards

- Air under pressure can cause injury. Never point an air hose at yourself or anyone else. Never blow your clothes free of dust with compressed air. Always direct exhaust air away from yourself and others in the work area.
- Always check for damaged or loose hoses and fittings before using an air tool, and replace if necessary. Whipping hoses can cause serious injury.
- Disconnect the tool from the air supply when not in use, before changing accessories, setting the torque, or when making repairs.
- Do not exceed rated air pressure to increase the output of the tool. This could cause injury and shorten tool life.
- Do not assemble quick coupler on the tool. Vibration can cause breakage resulting in a whipping air hose. Instead, use quick couplers on the end of a short leader hose.
- When universal twist couplings are used, lock pins must be installed to prevent accidental hose disconnection.
- Air tools are not intended for use in explosive atmospheres and are not insulated for contact with electric power sources.