



Torques

13 Torques

All Synventive parts are to be tightened to the prescribed torques specified in the following table.

13.1 Relevant Parts attached with Screws pursuant to ISO 4762 (DIN 912)

- All screw connections of the actuators with socket head cap screws.
- All screw connections on the manifold and the mold.
- All screw connections of the A series inlet bushings (e.g. ABK etc.).
- All other components, such as protective heat shields, tie-down straps etc. are not deemed to be the subject of this manual, and therefore are not included. Information on these torques, not specified herein, shall be given to the workers by qualified professional personnel as needed.

NOTICE

A list of torque values is contained on each customer drawing and is binding upon all departments using the drawing.

13.2 Tool Specifications

A properly calibrated torque wrench must be used for the components in the list on the next page.



Torques

13.3 Instructions on Torques for Synventive parts

Table 9: List of torques for Synventive part

Torques – Nozzles					
API					
	Parts	Thread size	Wrench size	Nm	ft-lbs
03C	Nozzle tip	M6x0,75	HEX7	5	4
04C	Nozzle tip	M10x0,75	HEX10	15	11
CB	Nozzle tip	M12x1	HEX14/VZ14	30	22
06E	Nozzle body	M16x1	HEX15	45	33
06S	Nozzle body	M16x1	HEX32 via Adapt.	45	33
06E / 06S	Nozzle tip	M10x0,75	HEX10	18	13
07E01	Nozzle body	M20x1	HEX16	70	52
07E	Nozzle tip	M12x1	SW14	30	22
09E	Nozzle body	M22x1,5	HEX19	100	74
09S	Nozzle body	M22x1,5	HEX32 via Adapt.	100	74
09E / 09S	Nozzle tip	M15x1	HEX15	35	26
12E	Nozzle body	M27x1	HEX24	175	130
12S	Nozzle body	M27x1	HEX24	175	130
12E / 12S	Nozzle tip	M20x1	HEX21	100	74
GA	Nozzle tip	M20x1	HEX17/21	100	74
12E01/12E03/12E-04	Nozzle body	M27x1	HEX24	175	130
12E01/12E03	Nozzle tip	M20x1	HEX17/21	100	74
12E-04	Nozzle tip	M20x1	HEX21	100	74
16E01/16E02/16E03/16E-04/12EX16	Nozzle body	M32x1,5	HEX32	340	250
16S-04	Nozzle body	M32x1,5	HEX32	340	250
16E01	Nozzle tip	M27x1	HEX 22/24/27	200	148
16E02	Nozzle tip	M20x1	HEX17/21	100	74
16E-04	Nozzle tip	M27x1	HEX27	200	148
GB	Nozzle tip	M27x1	HEX 22/24/27	200	148
22E01/22E02/22E03/22E-04/16EX22	Nozzle body	M42x1,5	HEX41	440	325
22S-04	Nozzle body	M42x1,5	HEX41	440	325
22E01	Nozzle tip	M30x1	HEX27	280	207
22E02	Nozzle tip	M27x1	HEX 22/24/27	200	148
22E03	Nozzle tip	M34x1,5	HEX30/32	400	295
22E-04	Nozzle tip	M34x1,5	HEX32	400	295
GC	Nozzle tip	M30x1	HEX27	280	207
APT					
	Parts	Thread size	Wrench size	NM	ft-lbs
SR-8	Nozzle tip	M12x1	14	30	22
T-16	Nozzle body	M45x2	41	400	300
T-16	Nozzle tip	M27x1	26	200	148
SR-16	Nozzle tip	M27x1	26	200	148
T-20	Nozzle body	M52x3	46	470	350
T-20	Nozzle tip	M36x2	36	340	250
SR-20	Nozzle tip	M25x1.5	27	270	200
T-24	Nozzle body	M60x3	57	470	350
T-24	Nozzle tip	M40x1.5	38	340	250
SR-24	Nozzle tip	M33x2	38	270	200



Torques

APT - Asia

Parts		Thread size	Wrench size	Nm	ft-lbs
09CP	Nozzle tip for CP01T, FFN, FFT, VG, W25V	M14x1	HEX10	20	15
09CP	Nozzle tip for K01N	M14x1	HEX10	47	35
Parts		Thread size	Wrench size	Nm	ft-lbs
09CP	Nozzle tip for K02N	M14x1	HEX11	47	35
12CP	Nozzle tip for CP01T, FFN, FFT, VG, W25V	M18x1	HEX13	30	22
12CP	Nozzle tip for K01N	M18x1	HEX13	90	67
12CP	Nozzle tip for K02N	M18x1	HEX15	90	67
16CP	Nozzle tip for CP01T, FFN, FFT, VG, W25V	M22x1.5	HEX17	60	44
16CP	Nozzle tip for K01N	M25x1.5	HEX18	270	200
08C	Nozzle tip for W01T, W01V, K01N	M14x1	HEX16	65	48
08C	Inner part for W01T, W01V	M12x1	HEX9	17	13

Torques – Manifold Parts and Others

Parts		Thread size	Wrench size	Nm	ft-lbs
Inlet bushing		M24x1,5	HEX21	120	89
Inlet bushing		M32x1,5	HEX27	260	192
Inlet bushing		M42x1,5	HEX41/46 (2012)	400	295
Inlet bushing		M48x1,5	HEX46	400	295
Inlet bushing		M48x2	HEX41	460	339
Inlet bushing 09CP		M27x1,5	HEX27	200	148
Inlet bushing 12CP		M27x1,5	HEX27	200	148
Inlet bushing 16CP		M36x1,5	HEX36	320	237
Valve pin guide NG20 / NG30 / NG38		M14x1	HEX16	30	22
Valve pin guide NG05 / NG06 / NG08 / VPG - M22		M22x1	HEX27	100	74
Valve pin guide nut 47-85-101		M27x1	HEX27	170	125
Screw connections cylinder housing PNC7518M		M6	HEX5	9	7

Torques – Dynamic Feed® Components

Parts		Thread size	Wrench size	Nm	ft-lbs
Transducer block DFTB12	Socket head cap screw ISO 4762 - 12.9 (DIN912)	M10	HEX8	50	37
Transducer block DFTB16	Socket head cap screw ISO 4762 - 12.9 (DIN912)	M16	HEX14	180	133
Transducer block DFTB22	Socket head cap screw ISO 4762 - 12.9 (DIN912)	M16	HEX14	180	133
Melt pressure sensor DFMP5		1/2"- 20 UNF	HEX13	45	33

Torques for Screws and Nuts

Parts		Thread size	Wrench size	Nm	ft-lbs
Socket head cap screw ISO 4762 - 12.9 (DIN912)		M4	HEX3	4	3
Socket head cap screw ISO 4762 - 12.9 (DIN912)		M5	HEX4	8	6
Socket head cap screw ISO 4762 - 12.9 (DIN912)		M6	HEX5	14	10
Socket head cap screw ISO 4762 - 12.9 (DIN912)		M8	HEX6	34	25
Socket head cap screw ISO 4762 - 12.9 (DIN912)		M10	HEX8	67	50
Socket head cap screw ISO 4762 - 12.9 (DIN912)		M12	HEX10	115	85
Socket head cap screw ISO 4762 - 12.9 (DIN912)		M14	HEX12	185	136
Socket head cap screw ISO 4762 - 12.9 (DIN912)		M16	HEX14	290	214

NOTICE

Torque values for screws and nuts < M4 are not specified in the torque list.

(EN)



Torques

Torques - Manifold Plug Set Screw

for APT Manifolds

Parts	Thread size	Wrench size	Nm	ft-lbs
62-PD-002 Removable manifold plug	M12		40	30
	M14		60	45
	M16		100	75
	M20		130	130
	M22		230	170
	M24		245	180
	M27		270	200
	M33		475	350
62-PD-006 Removable manifold plug	M16		100	75
	M20		175	130
	M24		300	220
	M27		375	275
	M33		475	350
62-PD-007 Removable manifold plug	M16		100	75
	M20		175	130
	M24		300	220
	M27		375	275
	M33		475	350
Indicates torque specification provided for special oversized endwork that does not appear in 62-PD-002, 62-PD-006 or 62-PD-007.	M45		680*	500*
	M48		850*	625*

for API Manifolds

Parts	Thread size	Wrench size	Nm	ft-lbs
MP02 Removable manifold plug (Thread bold MPT141502)	M14x1	SW6	15	11
MP02 Removable manifold plug (Thread bold MPT161502)	M16x1	SW8	25	18.5
MP02 Removable manifold plug (Thread bold MPT181502)	M18x1	SW10	45	33
MP02 Removable manifold plug (Thread bold MPT201502)	M20x1	SW10	65	48
MP02 Removable manifold plug (Thread bold MPT222002)	M22x1	SW12	90	67
MP02 Removable manifold plug (Thread bold MPT242002)	M24x1	SW12	125	92
MP02 Removable manifold plug (Thread bold MPT262002)	M26x1	SW14	165	122
MP02 Removable manifold plug (Thread bold MPT282002)	M28x1	SW14	215	160
MP02 Removable manifold plug (Thread bold MPT302002)	M30x1	SW17	275	203
MP02 Removable manifold plug (Thread bold MPT332002)	M33x1	SW17	380	280

Torques - No Current Series

Parts	Thread size	Wrench size	Nm	ft-lbs
C Outside body	M27x1,5	HEX22	80	59
C (CW00) Outside body	M27x1,5	HEX22	50	37
EA Nozzle body	M27x1	HEX24	120	89
T-5, HT-5, T-10, HT-10 Nozzle body			135	100
T-5, HT 5 Nozzle tip			65	50
T-10, HT-10 Nozzle tip			120	90
SRP-20, TP-20 Nozzle tip			200	150
SRP-24, TP-24 Nozzle tip			270	200
EG-10 Nozzle tip			65	50
HTP-10 Nozzle tip			120	90