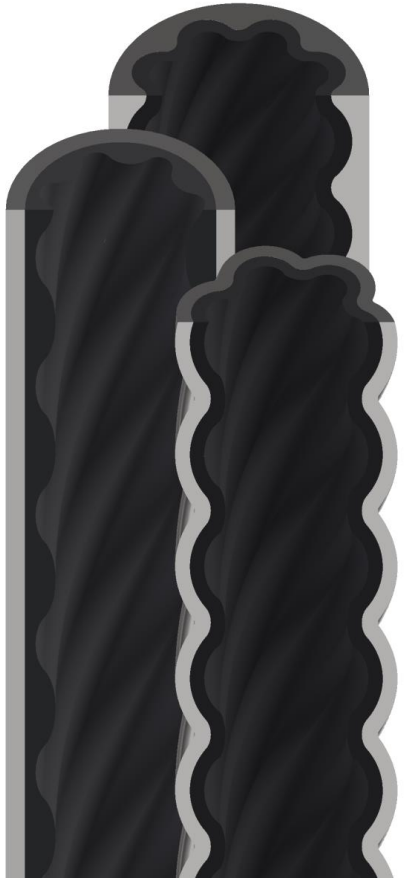
SPIRA® Power Section Catalog

PARADIGM
POWER SOLUTIONS

PARADIGM
POWER SOLUTIONS

Spira 2.0----The Next Chapter



In early 2023, Spira implemented an initiative to capitalize on the knowledge, experience and expertise of decades of rubber compounding and processing from our partners at Artemis in Hanover, Germany. This partnership makes us one of the only power section manufacturers with in-house rubber compounding, allowing us complete control over development, processing and quality.

Our latest compound has been utilized in the field for the past 14 months. We have had outstanding success with this elastomer, injecting over 2,400 stators and receiving extremely positive feedback with respect to performance and reliability.

We are now launching this compound as “Paradigm89” along with a new look for the entire company. “Paradigm Power Solutions” will now be our flagship brand that specializes in custom, customer specific power section designs for use both in drilling motor and agitator applications. As a mid-sized manufacturer, we are able to react quickly on new projects and designs for our customers.

In addition to these exciting new announcements, in late 2022 we added in-house rotor and core tooling (molds) manufacturing capabilities to have complete control over quality and delivery times. This also allows us even more agility with respect to custom design and manufacturing under the Paradigm Power Solutions brand name.

Finally, we have developed a new Mobile app. Available from the app store under Spira or scan the below QR code.

www.spirasystems.com

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CANADA: 1-587-775-7777
22 East Lake Crescent NE
Airdrie, AB T4A 2H3

USA: 1-281-253-4000
16518 Aldine Westfield, Suite A
Houston, TX 77032

Paradigm 89 is Our Latest Hard Rubber

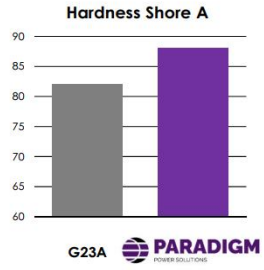
Paradigm 89 Features:

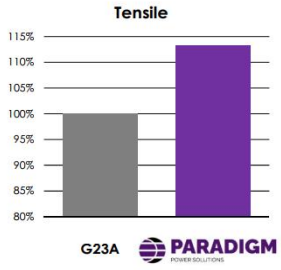
- Excellent swell resistance in water, saturated brine, and oil based drilling fluids
- Optimized properties to minimize hysteresis heat buildup and stator chunking in demanding applications
- Excellent dynamic properties suitable for high flow and speed
- Exceptional wear resistance where drilling fluid has high concentration of solids or sand
- Superb rubber to tube bond strength

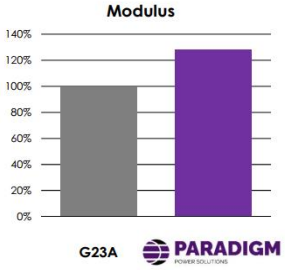
Increased Performance/Proven Reliability

- Spira is committed to continuous product improvement. This summarizes results of minor modifications made to our legacy HRD rubbers.
- Paradigm 89 is our next Generation harder HRD compound based on G23A's proven reliability.
- Our aim was to increase the Shore Hardness with a processing tolerance window of 85-90. These adjustments also resulted in improved tensile and modulus properties.

Paradigm 89 VS G23A





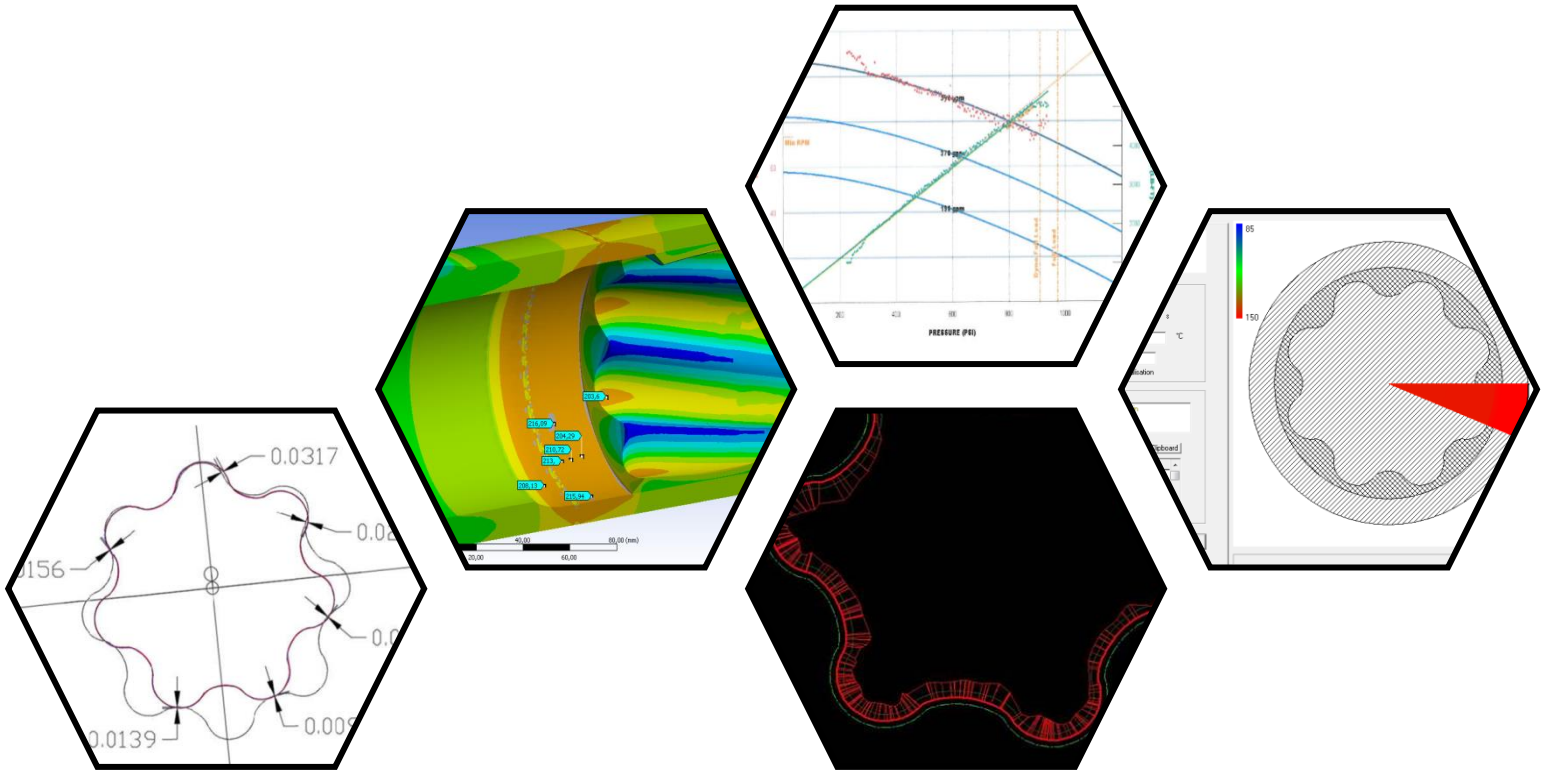


PARADIGM
POWER SOLUTIONS

Advanced Power Section Engineering

At Spira Systems, we believe in pushing the limits of our expertise. We are always finding new ways to educate and collaborate with customers to improve performance and understanding throughout the industry. This is why we choose to:

- Design our optimal fit around downhole conditions, not dyno conditions
- Measure true profile sizes using a no-contact Laser Measuring Machine
- Verify performance on a full-scale dynamometer



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POWER SOLUTIONS

22 East Lake Crescent NE
Airdrie, Alberta, Canada
T4A 2H3
587-775-7777
sales@spirasystems.com

Conventional Performance Summary

Model	Size	Lobes	Stages	Tube OD (in)	Tube ID (in)	Stator Length (in)	Compatibility				Bit Speed (rev/gal) [rev/l]	Max Off Bottom Speed (RPM)	Optimal Flow Range (GPM) [lpm]	Max Flow Limit (GPM) [lpm]	Power at Max (HP) [kW]	Max Motor Pressure (psi) [kPa]	Max Torque Limit (ft-lb) [N-m]	Stall Torque (ft-lb) [N-m]
							Dyna-Drill	Abaco	Weatherford	NOV (Legacy R&M)								
SPS475783.8	4.75"	7/8	3.8	4.75	3.75	187.0	x	x	x	x	0.521 [0.138]	130	150-250 [570-950]	300 [1140]	85 [65]	900 [6200]	4650 [6300]	6950 [9400]
SPS500566.7	5.00"	5/6	6.7	5.00	4.00	250.0		x			0.630 [0.166]	240	150-375 [570-1420]	400 [1520]	210 [155]	1550 [10900]	6350 [8600]	9500 [12900]
SPS500568.3	5.00"	5/6	8.3	5.00	3.75	242.6	x	x	x	x	1.000 [0.264]	300	100-300 [380-1140]	300 [1140]	210 [155]	1950 [13400]	5000 [6800]	7550 [10200]
SPS500677.0	5.00"	6/7	7	5.00	4.00	212.0	x	x		x	0.810 [0.214]	280	160-350 [610-1330]	350 [1330]	205 [155]	1650 [11300]	5250 [7100]	7850 [10600]
SPS500677.0 WFD	5.00"	6/7	7	5.00	4.00	212.0			x		0.820 [0.217]	290	160-350 [610-1330]	350 [1330]	200 [150]	1650 [11300]	5100 [6900]	7650 [10400]
SPS500678.0	5.00"	6/7	8	5.00	4.00	250.0	x	x	x	x	0.810 [0.214]	280	160-350 [610-1330]	350 [1330]	235 [175]	1900 [13000]	6000 [8100]	8950 [12200]
SPS500678.8	5.00"	6/7	8.8	5.00	4.00	275.0	x	x			0.660 [0.174]	230	150-350 [570-1330]	350 [1330]	305 [225]	2050 [14300]	7650 [10400]	11500 [15600]
SPS500679.0	5.00"	6/7	9	5.00	4.00	250.0		x			0.850 [0.225]	300	150-350 [570-1330]	350 [1330]	255 [190]	2100 [14600]	6200 [8400]	9250 [12600]
SPS500783.7	5.00"	7/8	3.7	5.00	4.00	235.0	x	x	x		0.368 [0.097]	130	150-350 [570-1330]	350 [1330]	105 [80]	850 [6000]	6000 [8100]	9000 [12200]
SPS500783.8	5.00"	7/8	3.8	5.00	3.75	187.0	x	x	x	x	0.521 [0.138]	130	150-250 [570-950]	300 [1140]	85 [65]	900 [6200]	4650 [6300]	6950 [9400]
SPS500784.5	5.00"	7/8	4.5	5.00	4.00	229.3	x	x			0.463 [0.122]	140	150-300 [570-1140]	300 [1140]	105 [80]	1050 [7300]	5500 [7400]	8200 [11200]
SPS500785.7	5.00"	7/8	5.7	5.00	4.00	250.0	x	x			0.522 [0.138]	190	200-370 [760-1410]	400 [1520]	165 [125]	1400 [9700]	6500 [8800]	9750 [13200]
SPS500786.4	5.00"	7/8	6.4	5.00	3.88	235.0	x		x		0.630 [0.166]	190	150-300 [570-1140]	300 [1140]	145 [110]	1500 [10400]	5550 [7500]	8350 [11300]
SPS500896.0	5.00"	8/9	6	5.00	4.00	250.0	x	x	x		0.510 [0.135]	180	200-350 [760-1330]	350 [1330]	170 [130]	1400 [9700]	6900 [9400]	10350 [14100]
SPS5137810.0	5.13"	7/8	10	5.13	4.00	250.0	x	x	x		0.825 [0.218]	250	100-300 [380-1140]	320 [1220]	235 [175]	2450 [17000]	7150 [9700]	10750 [14600]

Performance tables are for reference only. Actual power section performance may vary depending on operating conditions (e.g. chosen rotor/stator interference fit, possible rubber swelling by drilling fluid, rotor and stator wear, actual downhole temperature, actual stator temperature, physical and chemical properties of the drilling fluid and other factors encountered downhole). The torque may exceed that specified for the connected components. Operating above the recommended limits may result in damage to the power section and connected components which will be the liability of the operator. Data subject to change without notice. Please visit www.spirasystems.com for most recent information.

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Model	Size	Lobes	Stages	Tube OD (in)	Tube ID (in)	Stator Length (in)	Compatibility				Bit Speed (rev/gal) [rev/l]	Max Off Bottom Speed (RPM)	Optimal Flow Range (GPM) [lpm]	Max Flow Limit (GPM) [lpm]	Power at Max (HP) [kW]	Max Motor Pressure (psi) [kPa]	Max Torque Limit (ft-lb) [N-m]	Stall Torque (ft-lb) [N-m]
							Dyna-Drill	Abaco	Weatherford	NOV (Legacy R&M)								
SPS5255611.8	5.25"	5/6	11.8	5.25	4.25	275.0	x	x	x		0.800 [0.211]	320	200-400 [760-1520]	400 [1520]	400 [300]	2750 [19000]	8850 [12000]	13300 [18000]
SPS525788.5 FATBOY™	5.25"	7/8	8.5	5.25	4.10	275.0					0.518 [0.137]	220	200-425 [760-1610]	425 [1610]	325 [240]	2000 [13800]	10600 [14400]	15900 [21500]
SPS650784.8	6.50"	7/8	4.8	6.50	5.00	204.0	x	x	x	x	0.320 [0.085]	180	300-575 [1140-2180]	575 [2180]	180 [135]	1200 [8300]	9700 [13200]	14600 [19800]
SPS675457.0	6.75"	4/5	7	6.75	5.50	210.0	x	x	x	x	0.494 [0.131]	300	300-600 [1140-2280]	600 [2280]	365 [270]	1650 [11300]	8800 [12000]	13250 [17900]
SPS675675.0	6.75"	6/7	5	6.75	5.50	200.0	x	x	x	x	0.292 [0.077]	180	300-600 [1140-2280]	600 [2280]	240 [180]	1200 [8100]	9750 [13200]	14650 [19900]
SPS675785.0	6.75"	7/8	5	6.75	5.50	194.5	x	x	x	x	0.270 [0.071]	160	300-600 [1140-2280]	650 [2470]	240 [180]	1200 [8100]	10650 [14400]	15950 [21700]
SPS675785.7 SX2	6.75"	7/8	5.7	6.75	5.50	260.0	x	x	x	x	0.242 [0.064]	150	300-600 [1140-2280]	700 [2650]	290 [215]	1350 [9200]	14350 [19400]	21500 [29100]
SPS675786.0	6.75"	7/8	6	6.75	5.50	235.0	x	x	x		0.270 [0.071]	160	300-600 [1140-2280]	650 [2470]	290 [215]	1400 [9700]	12750 [17300]	19150 [26000]
SPS675786.4	6.75"	7/8	6.4	6.75	5.50	245.0	x	x			0.270 [0.071]	160	300-600 [1140-2280]	650 [2470]	310 [230]	1500 [10400]	13650 [18500]	20450 [27700]
SPS6759108.0	6.75"	9/10	8	6.75	5.50	260.0	x	x	x		0.270 [0.071]	190	400-700 [1520-2650]	700 [2650]	450 [335]	1900 [13000]	17100 [23200]	25650 [34800]
SPS700678.4	7.00"	6/7	8.4	7.00	5.75	275.0		x			0.300 [0.079]	230	350-750 [1330-2840]	750 [2840]	460 [345]	1950 [13600]	16550 [22400]	24800 [33600]
SPS700787.3	7.00"	7/8	7.3	7.00	5.75	275.0					0.266 [0.070]	200	300-750 [1140-2840]	750 [2840]	465 [345]	1800 [12400]	17500 [23700]	26250 [35600]
SPS700788.5	7.00"	7/8	8.5	7.00	5.75	300.0	x	x			0.260 [0.069]	200	500-750 [1900-2840]	750 [2840]	530 [395]	2000 [13800]	19550 [26500]	29300 [39700]
SPS800784.0	8.00"	7/8	4	8.00	6.25	203.2	x	x	x	x	0.155 [0.041]	140	400-900 [1520-3410]	900 [3410]	290 [215]	950 [6500]	14800 [20100]	22250 [30100]
SPS800785.9	8.00"	7/8	5.9	8.00	6.25	300.0	x	x			0.155 [0.041]	140	400-900 [1520-3410]	900 [3410]	425 [315]	1400 [9600]	21850 [29600]	32800 [44500]

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USA
16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

CANADA
22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
Phone: (587) 775-7777
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4.75 7/8 LOBES 3.8 STAGES

Stator Specifications		
Overall Length in. [mm]	187.0	[4750]
Tube O.D. in. [mm]	4.75	[121]
Tube I.D. (Terminal) in. [mm]	3.75	[95]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	505	[230]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

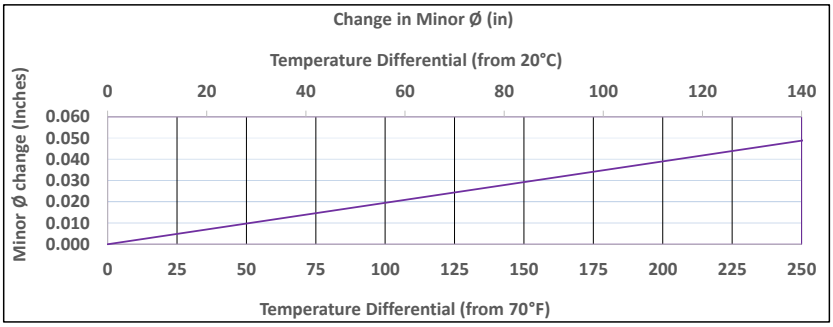
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.012	2.607
0.5T	0.002	2.617
STD	-0.008	2.627
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000195 [0.000351]**

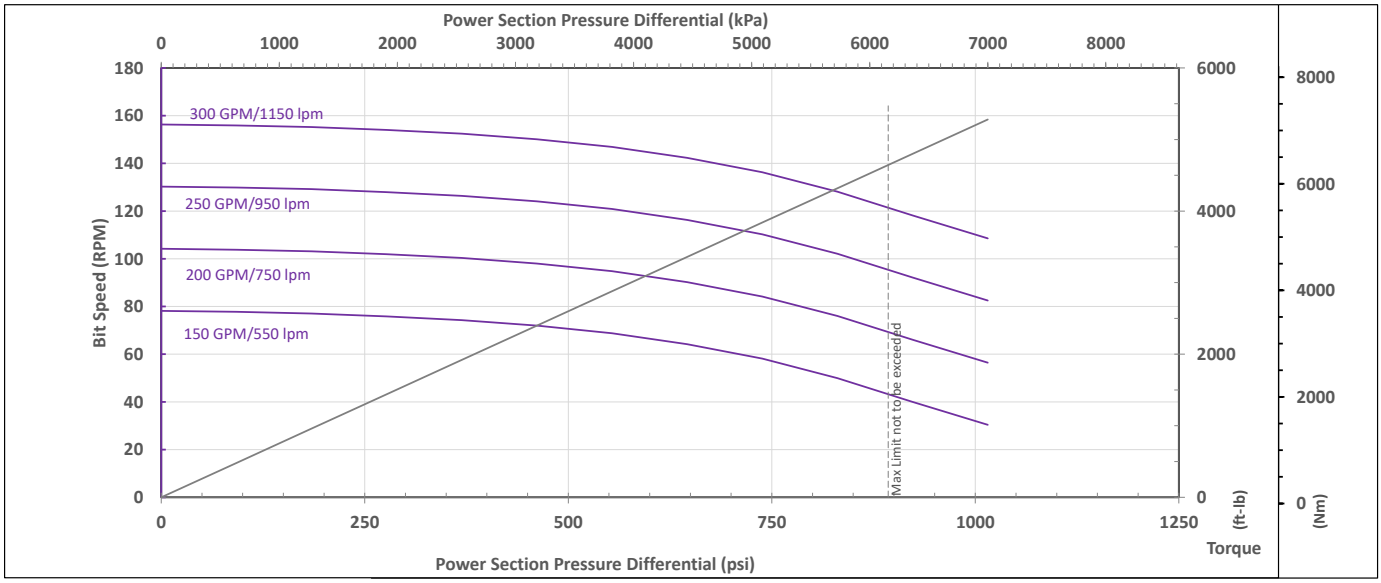
Rotor Specifications		
Overall Length in. [mm]	178.0	[4521]
Contour Length in. [mm]	172.3	[4375]
Major Diameter in. [mm]	2.945	[74.8]
Eccentricity in. [mm]	0.163	[4.1]
Head Diameter in. [mm]	2.750	[69.9]
Gunbored Weight lb [kg]	235	[107]
Solid Weight lb [kg]	274	[124]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	150 - 300	[570 - 950]
Speed Range RPM	80 - 130	
Torque Slope ft-lb/psi [Nm/kPa]	5.200	[1.023]
Rotation rev/Gal [rev/lit]	0.521	[0.138]
Stall Torque ft-lb [Nm]	6,950	[9,400]

Operating Parameters		
Max Diff Pressure psi [kPa]	900	[6,200]
Torque ft-lbs [Nm]	4,650	[6,300]
Max Flow Rate GPM [lpm]	300	[900]
Full Load RPM	121 at 300 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





Performance curves are for reference only. Actual power section performance may vary depending on operating conditions (e.g. chosen rotor/stator interference fit, possible rubber swelling by drilling fluid, rotor and stator wear, actual downhole temperature, actual stator temperature, physical and chemical properties of the drilling fluid, and other factors encountered downhole). The torque may exceed that specified for the connected components. Operating above the recommended limits may result in damage to the power section and connected components which the operator may be liable for. Data subject to change without notice. Visit www.spirasystems.com for most up to date information.

Model last revised: 2024-10-01

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USA
16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
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5.00 5/6 LOBES 6.7 STAGES

CANADA
22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
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Stator Specifications		
Overall Length in. [mm]	250.0	[6350]
Tube O.D. in. [mm]	5.00	[127]
Tube I.D. (Terminal) in. [mm]	4.00	[102]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	555	[250]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

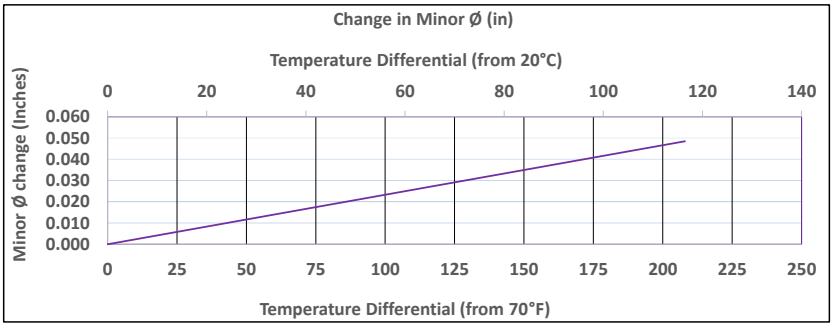
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.005	2.645
0.5T	-0.005	2.655
STD	-0.015	2.665
0.5L	-0.025	2.675
1.0L	-0.035	2.685
Minor Shrinkage (in/°F) [in/°C]		**0.000233 [0.000419]**

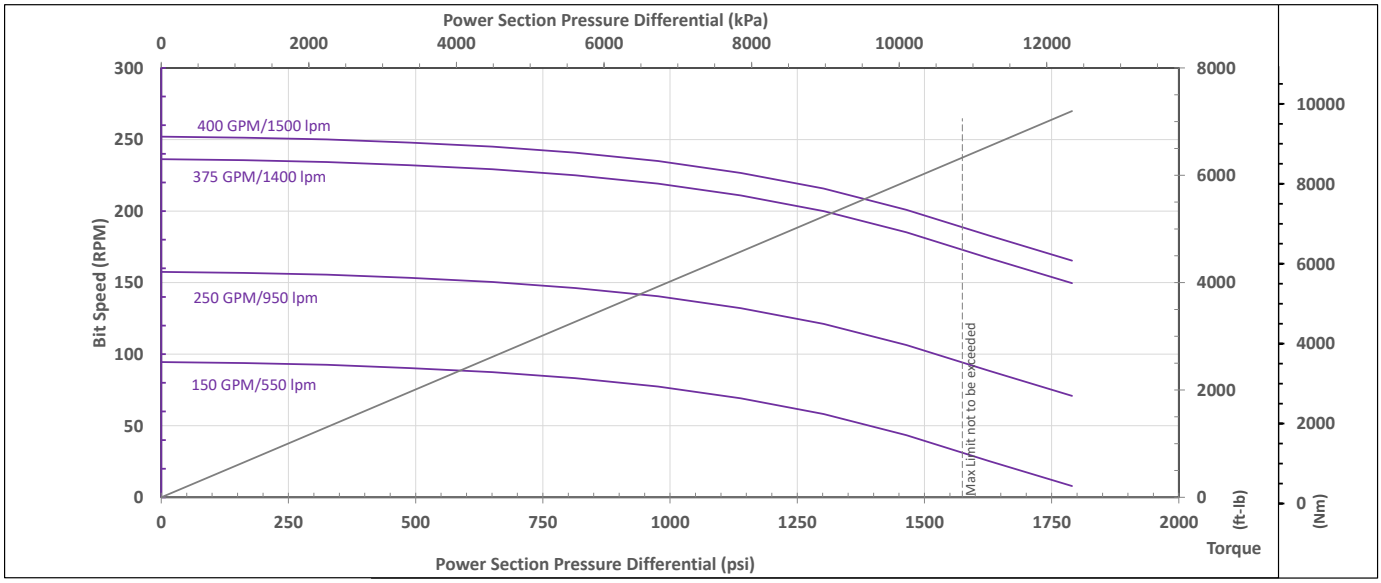
Rotor Specifications		
Overall Length in. [mm]	241.0	[6121]
Contour Length in. [mm]	235.0	[5969]
Major Diameter in. [mm]	3.120	[79.2]
Eccentricity in. [mm]	0.235	[6.0]
Head Diameter in. [mm]	2.900	[73.7]
Gunbored Weight lb [kg]	330	[150]
Solid Weight lb [kg]	383	[174]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	150 - 400	[570 - 1420]
Speed Range RPM	95 - 235	
Torque Slope ft-lb/psi [Nm/kPa]	4.020	[0.791]
Rotation rev/Gal [rev/lit]	0.630	[0.166]
Stall Torque ft-lb [Nm]	9,500	[12,900]

Operating Parameters		
Max Diff Pressure psi [kPa]	1550	[10,900]
Torque ft-lbs [Nm]	6,350	[8,600]
Max Flow Rate GPM [lpm]	400	[1,400]
Full Load RPM	189 at 400 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





Performance curves are for reference only. Actual power section performance may vary depending on operating conditions (e.g. chosen rotor/stator interference fit, possible rubber swelling by drilling fluid, rotor and stator wear, actual downhole temperature, actual stator temperature, physical and chemical properties of the drilling fluid, and other factors encountered downhole). The torque may exceed that specified for the connected components. Operating above the recommended limits may result in damage to the power section and connected components which the operator may be liable for. Data subject to change without notice. Visit www.spirasystems.com for most up to date information.

Model last revised: 2024-10-01

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Houston, TX, 77032
Phone: (281) 253-4000
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5.00 5/6 LOBES 8.3 STAGES

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Stator Specifications		
Overall Length in. [mm]	242.6	[6162]
Tube O.D. in. [mm]	5.00	[127]
Tube I.D. (Terminal) in. [mm]	3.75	[95]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	635	[290]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

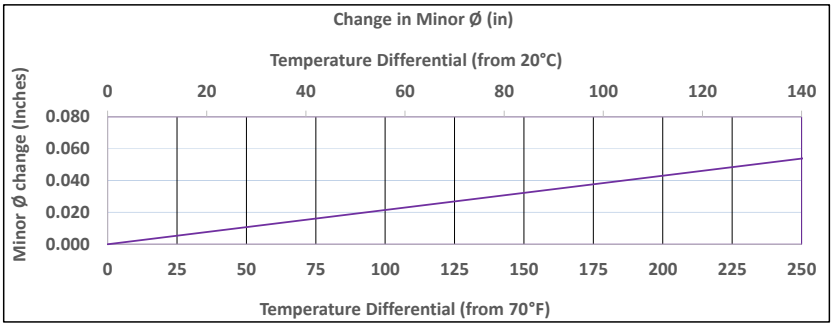
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.005	2.497
0.5T	-0.005	2.507
STD	-0.015	2.517
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000215 [0.000387]**

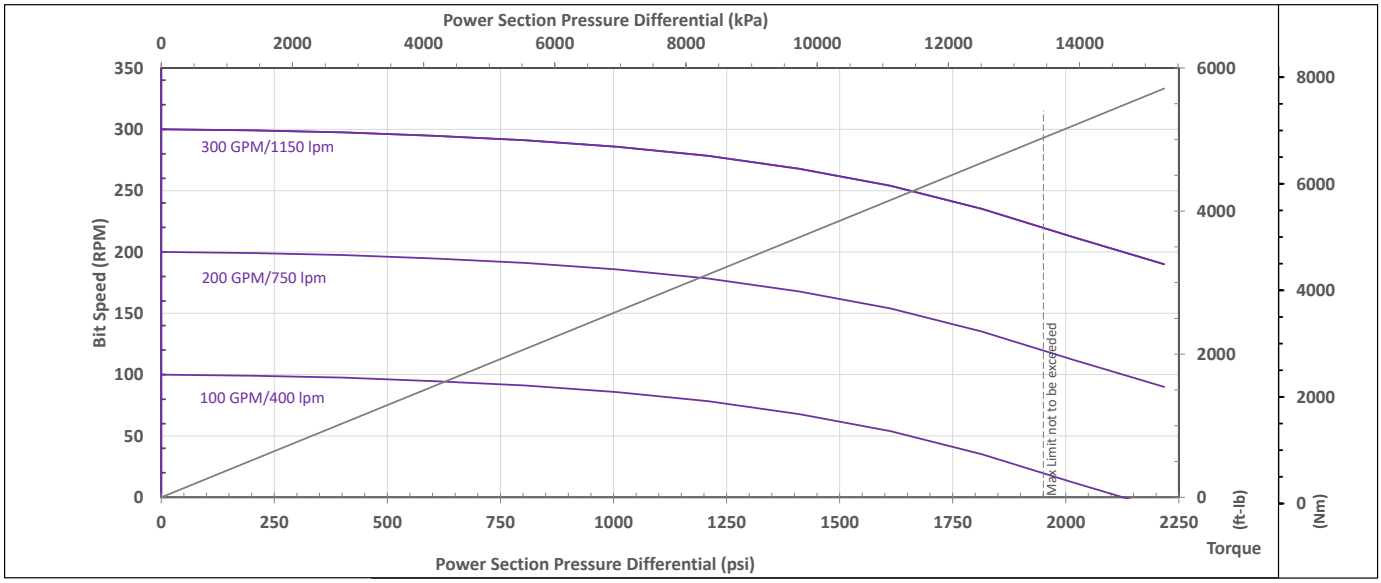
Rotor Specifications		
Overall Length in. [mm]	229.5	[5829]
Contour Length in. [mm]	223.0	[5664]
Major Diameter in. [mm]	2.916	[74.1]
Eccentricity in. [mm]	0.207	[5.3]
Head Diameter in. [mm]	2.750	[69.9]
Gunbored Weight lb [kg]	275	[125]
Solid Weight lb [kg]	325	[148]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	100 - 300	[380 - 1140]
Speed Range RPM	100 - 300	
Torque Slope ft-lb/psi [Nm/kPa]	2.576	[0.507]
Rotation rev/Gal [rev/lit]	1.000	[0.264]
Stall Torque ft-lb [Nm]	7,550	[10,200]

Operating Parameters		
Max Diff Pressure psi [kPa]	1950	[13,400]
Torque ft-lbs [Nm]	5,000	[6,800]
Max Flow Rate GPM [lpm]	300	[1,100]
Full Load RPM	220 at 300 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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USA
16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

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22 East Lake Crescent N.E.
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5.00 6/7 LOBES 7 STAGES WFD

Stator Specifications		
Overall Length in. [mm]	212.0	[5385]
Tube O.D. in. [mm]	5.00	[127]
Tube I.D. (Terminal) in. [mm]	4.00	[102]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	485	[220]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

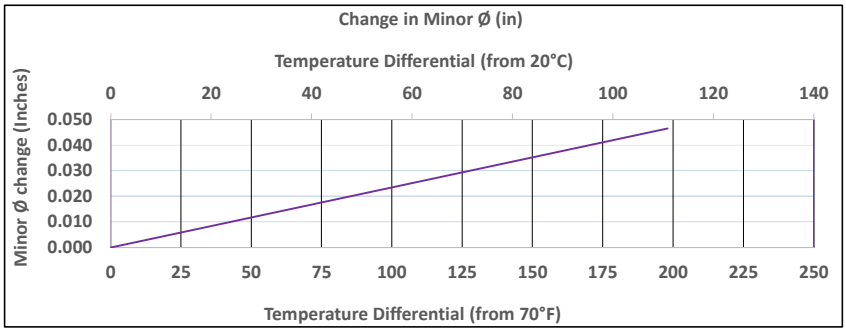
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.019	2.628
0.5T	0.009	2.638
STD	-	-
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000235 [0.000423]**

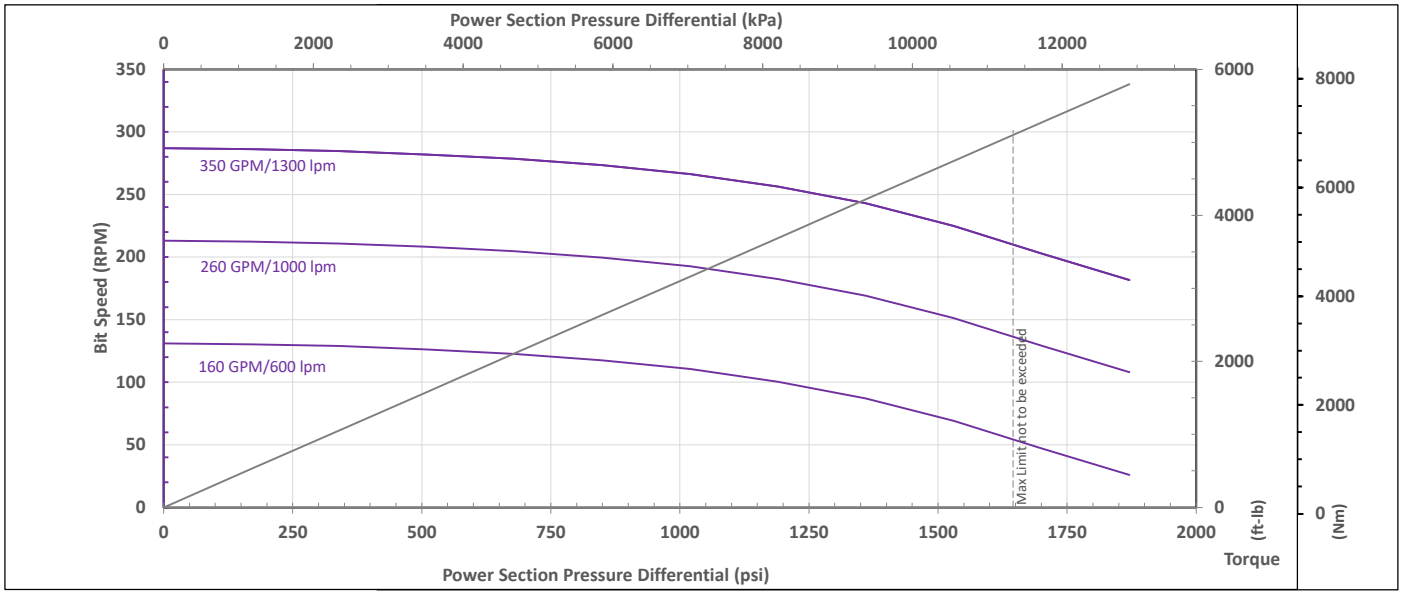
Rotor Specifications		
Overall Length in. [mm]	205.0	[5207]
Contour Length in. [mm]	197.3	[5010]
Major Diameter in. [mm]	3.029	[76.9]
Eccentricity in. [mm]	0.191	[4.9]
Head Diameter in. [mm]	3.125	[79.4]
Gunbored Weight lb [kg]	278	[126]
Solid Weight lb [kg]	321	[146]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	160 - 350	[610 - 1320]
Speed Range RPM	130 - 285	
Torque Slope ft-lb/psi [Nm/kPa]	3.100	[0.610]
Rotation rev/Gal [rev/lit]	0.820	[0.217]
Stall Torque ft-lb [Nm]	7,650	[10,400]

Operating Parameters		
Max Diff Pressure psi [kPa]	1650	[11,300]
Torque ft-lbs [Nm]	5,100	[6,900]
Max Flow Rate GPM [lpm]	350	[1,300]
Full Load RPM	210 at 350 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





Performance curves are for reference only. Actual power section performance may vary depending on operating conditions (e.g. chosen rotor/stator interference fit, possible rubber swelling by drilling fluid, rotor and stator wear, actual downhole temperature, actual stator temperature, physical and chemical properties of the drilling fluid, and other factors encountered downhole). The torque may exceed that specified for the connected components. Operating above the recommended limits may result in damage to the power section and connected components which the operator may be liable for. Data subject to change without notice. Visit www.spirasystems.com for most up to date information.

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Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

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22 East Lake Crescent N.E.
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5.00 6/7 LOBES 7 STAGES

Stator Specifications		
Overall Length in. [mm]	212.0	[5385]
Tube O.D. in. [mm]	5.00	[127]
Tube I.D. (Terminal) in. [mm]	4.00	[102]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	485	[220]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

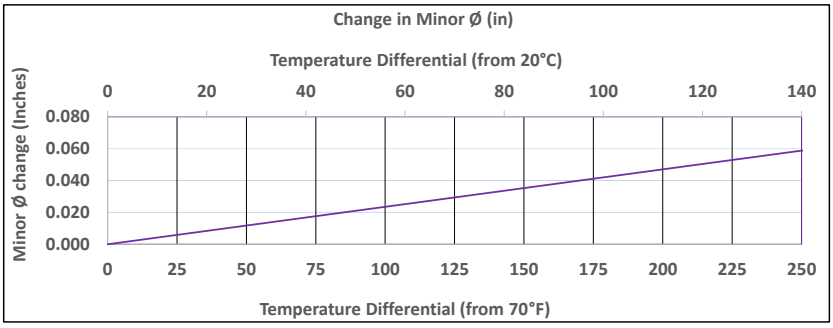
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.006	2.628
0.5T	-0.004	2.638
STD	-	-
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000235 [0.000423]**

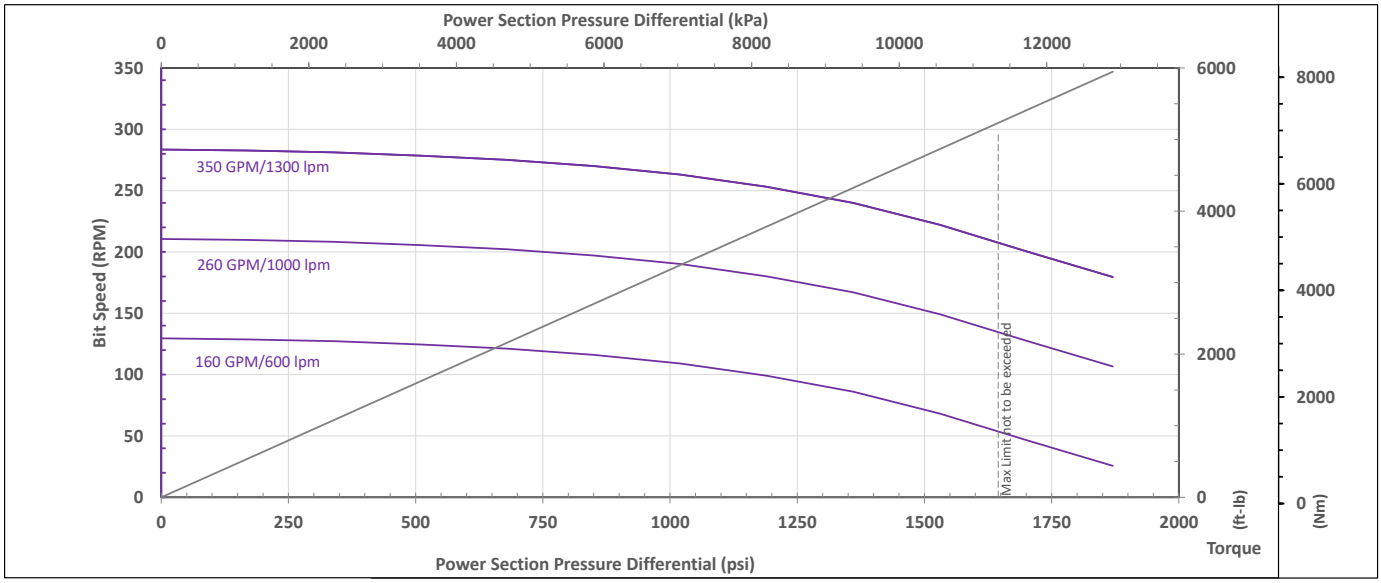
Rotor Specifications		
Overall Length in. [mm]	205.0	[5207]
Contour Length in. [mm]	197.3	[5010]
Major Diameter in. [mm]	3.018	[76.7]
Eccentricity in. [mm]	0.192	[4.9]
Head Diameter in. [mm]	3.125	[79.4]
Gunbored Weight lb [kg]	278	[126]
Solid Weight lb [kg]	321	[146]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	160 - 350	[610 - 1320]
Speed Range RPM	130 - 285	
Torque Slope ft-lb/psi [Nm/kPa]	3.180	[0.625]
Rotation rev/Gal [rev/lit]	0.810	[0.214]
Stall Torque ft-lb [Nm]	7,850	[10,600]

Operating Parameters		
Max Diff Pressure psi [kPa]	1650	[11,300]
Torque ft-lbs [Nm]	5,250	[7,100]
Max Flow Rate GPM [lpm]	350	[1,300]
Full Load RPM	208 at 350 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
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Stator Specifications		
Overall Length in. [mm]	250.0	[6350]
Tube O.D. in. [mm]	5.00	[127]
Tube I.D. (Terminal) in. [mm]	4.00	[102]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	555	[255]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

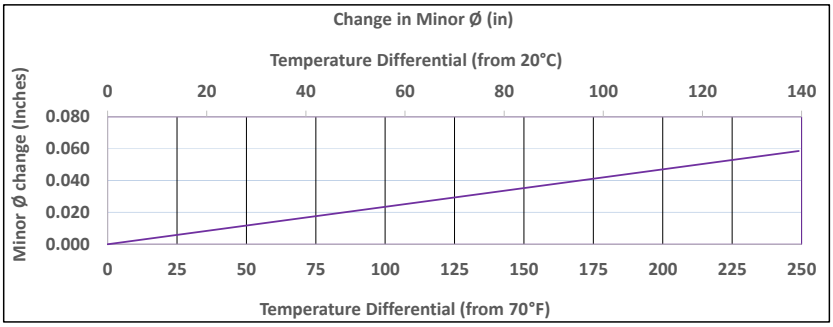
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.006	2.628
0.5T	-0.004	2.638
STD	-0.014	2.648
0.5L	-0.024	2.658
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000235 [0.000423]**

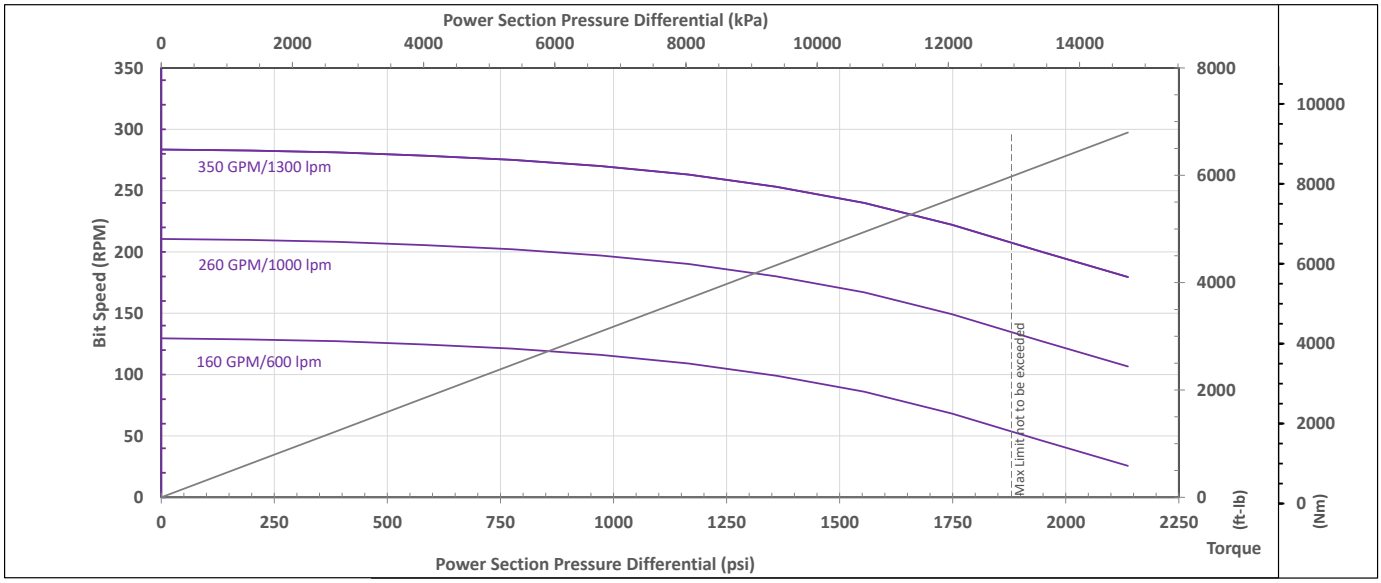
Rotor Specifications		
Overall Length in. [mm]	241.0	[6121]
Contour Length in. [mm]	235.0	[5969]
Major Diameter in. [mm]	3.018	[76.7]
Eccentricity in. [mm]	0.192	[4.9]
Head Diameter in. [mm]	3.000	[76.2]
Gunbored Weight lb [kg]	325	[147]
Solid Weight lb [kg]	378	[171]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	160 - 350	[610 - 1320]
Speed Range RPM	130 - 285	
Torque Slope ft-lb/psi [Nm/kPa]	3.180	[0.625]
Rotation rev/Gal [rev/lit]	0.810	[0.214]
Stall Torque ft-lb [Nm]	8,950	[12,200]

Operating Parameters		
Max Diff Pressure psi [kPa]	1900	[13,000]
Torque ft-lbs [Nm]	6,000	[8,100]
Max Flow Rate GPM [lpm]	350	[1,300]
Full Load RPM	208 at 350 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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Houston, TX, 77032
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Stator Specifications		
Overall Length in. [mm]	275.0	[6985]
Tube O.D. in. [mm]	5.00	[127]
Tube I.D. (Terminal) in. [mm]	4.00	[102]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	520	[235]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

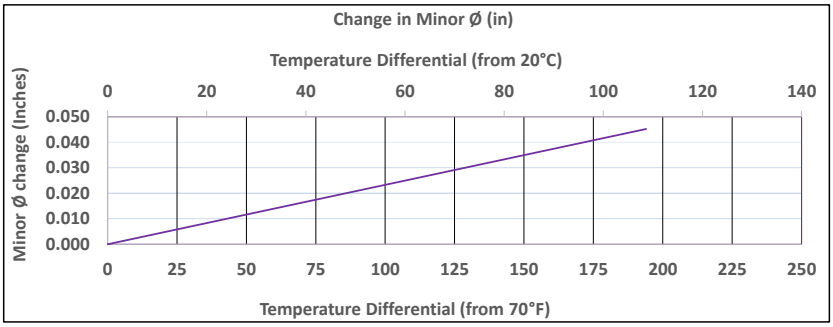
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	-	-
STD	0.004	2.860
0.5L	-0.006	2.870
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000233 [0.000420]**

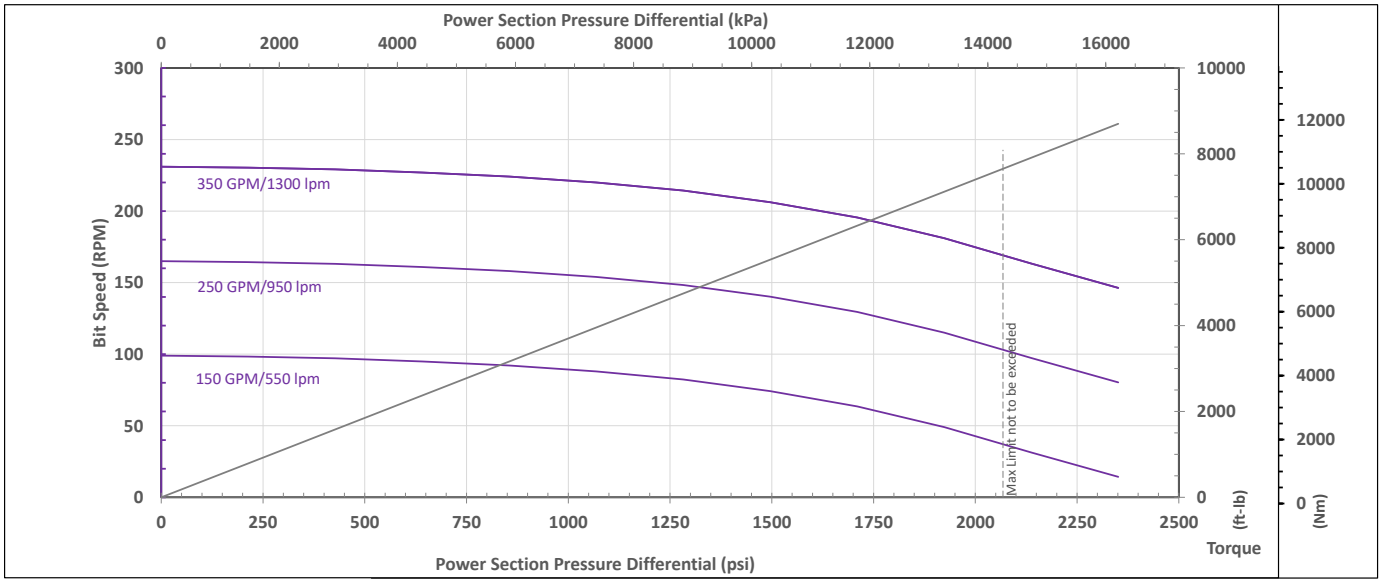
Rotor Specifications		
Overall Length in. [mm]	265.0	[6731]
Contour Length in. [mm]	258.0	[6553]
Major Diameter in. [mm]	3.298	[83.8]
Eccentricity in. [mm]	0.217	[5.5]
Head Diameter in. [mm]	2.900	[73.7]
Gunbored Weight lb [kg]	428	[194]
Solid Weight lb [kg]	487	[221]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	150 - 350	[570 - 1320]
Speed Range RPM	100 - 230	
Torque Slope ft-lb/psi [Nm/kPa]	3.700	[0.728]
Rotation rev/Gal [rev/lit]	0.660	[0.174]
Stall Torque ft-lb [Nm]	11,500	[15,600]

Operating Parameters		
Max Diff Pressure psi [kPa]	2050	[14,300]
Torque ft-lbs [Nm]	7,650	[10,400]
Max Flow Rate GPM [lpm]	350	[1,300]
Full Load RPM	169 at 350 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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www.spirasystems.com

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CANADA
22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
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Stator Specifications		
Overall Length in. [mm]	250.0	[6350]
Tube O.D. in. [mm]	5.00	[127]
Tube I.D. (Terminal) in. [mm]	4.00	[102]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	550	[250]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

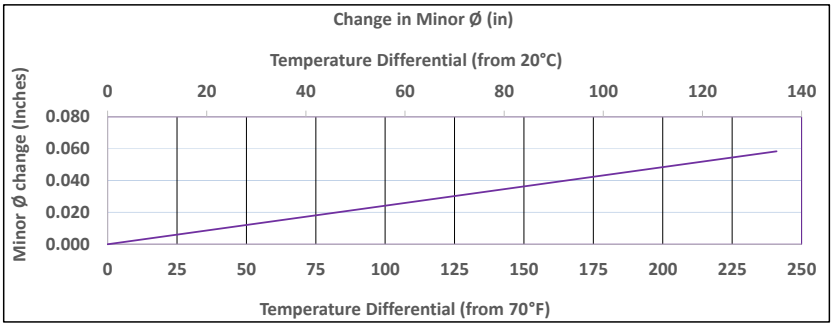
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	-	-
STD	-0.007	2.810
0.5L	-0.017	2.820
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000242 [0.000435]**

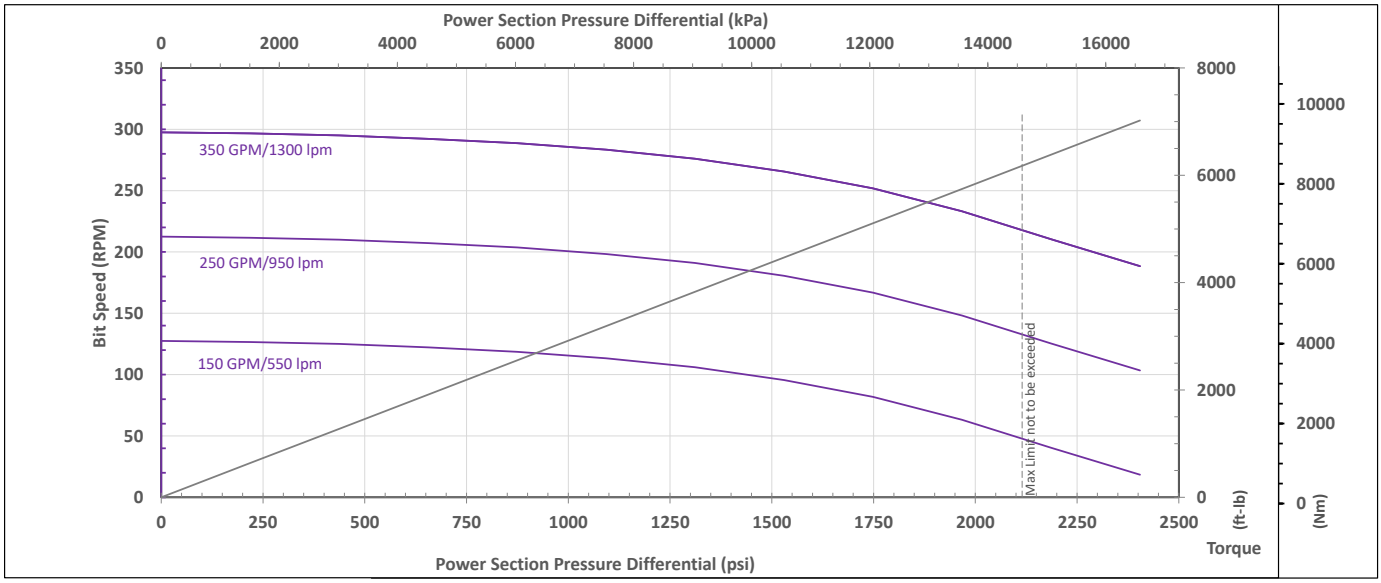
Rotor Specifications		
Overall Length in. [mm]	241.0	[6121]
Contour Length in. [mm]	235.0	[5969]
Major Diameter in. [mm]	3.190	[81]
Eccentricity in. [mm]	0.194	[4.9]
Head Diameter in. [mm]	2.900	[73.7]
Gunbored Weight lb [kg]	377	[171]
Solid Weight lb [kg]	430	[195]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	150 - 350	[570 - 1320]
Speed Range RPM	130 - 300	
Torque Slope ft-lb/psi [Nm/kPa]	2.920	[0.574]
Rotation rev/Gal [rev/lit]	0.850	[0.225]
Stall Torque ft-lb [Nm]	9,250	[12,600]

Operating Parameters		
Max Diff Pressure psi [kPa]	2100	[14,600]
Torque ft-lbs [Nm]	6,200	[8,400]
Max Flow Rate GPM [lpm]	350	[1,300]
Full Load RPM	218 at 350 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

CANADA
22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
Phone: (587) 775-7777
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Stator Specifications		
Overall Length in. [mm]	235.0	[5969]
Tube O.D. in. [mm]	5.00	[127]
Tube I.D. (Terminal) in. [mm]	4.00	[102]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	520	[235]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

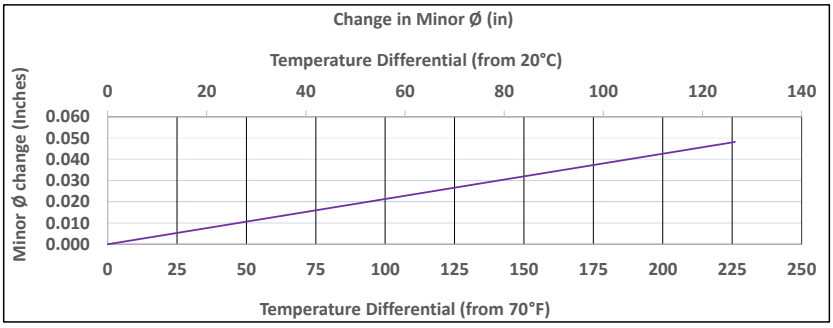
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.016	2.753
0.5T	0.006	2.763
STD	-0.004	2.773
0.5L	-0.014	2.783
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000213 [0.000384]**

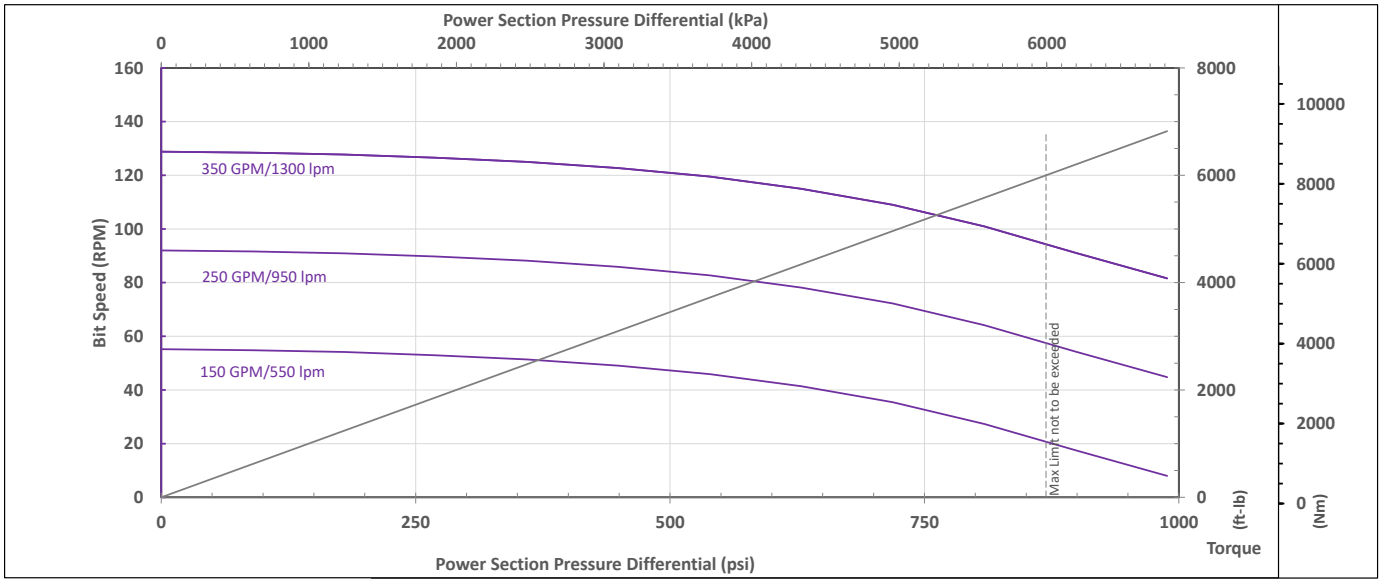
Rotor Specifications		
Overall Length in. [mm]	214.8	[5455]
Contour Length in. [mm]	208.3	[5290]
Major Diameter in. [mm]	3.122	[79.3]
Eccentricity in. [mm]	0.177	[4.5]
Head Diameter in. [mm]	3.250	[82.6]
Gunbored Weight lb [kg]	325	[147]
Solid Weight lb [kg]	372	[169]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	150 - 350	[570 - 1320]
Speed Range RPM	55 - 130	
Torque Slope ft-lb/psi [Nm/kPa]	6.901	[1.357]
Rotation rev/Gal [rev/lit]	0.368	[0.097]
Stall Torque ft-lb [Nm]	9,000	[12,200]

Operating Parameters		
Max Diff Pressure psi [kPa]	850	[6,000]
Torque ft-lbs [Nm]	6,000	[8,100]
Max Flow Rate GPM [lpm]	350	[1,300]
Full Load RPM	94 at 350 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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Airdrie, AB, T4A 2H3
Phone: (587) 775-7777
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5.00 7/8 LOBES 3.8 STAGES

Stator Specifications		
Overall Length in. [mm]	187.0	[4750]
Tube O.D. in. [mm]	5.00	[127]
Tube I.D. (Terminal) in. [mm]	3.75	[95]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	485	[220]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

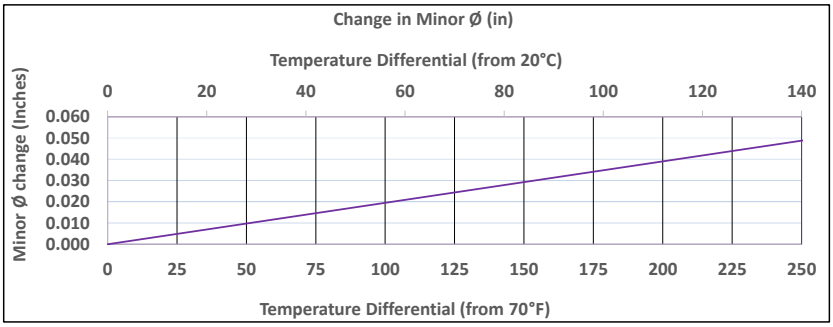
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.012	2.607
0.5T	0.002	2.617
STD	-0.008	2.627
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000195 [0.000351]**

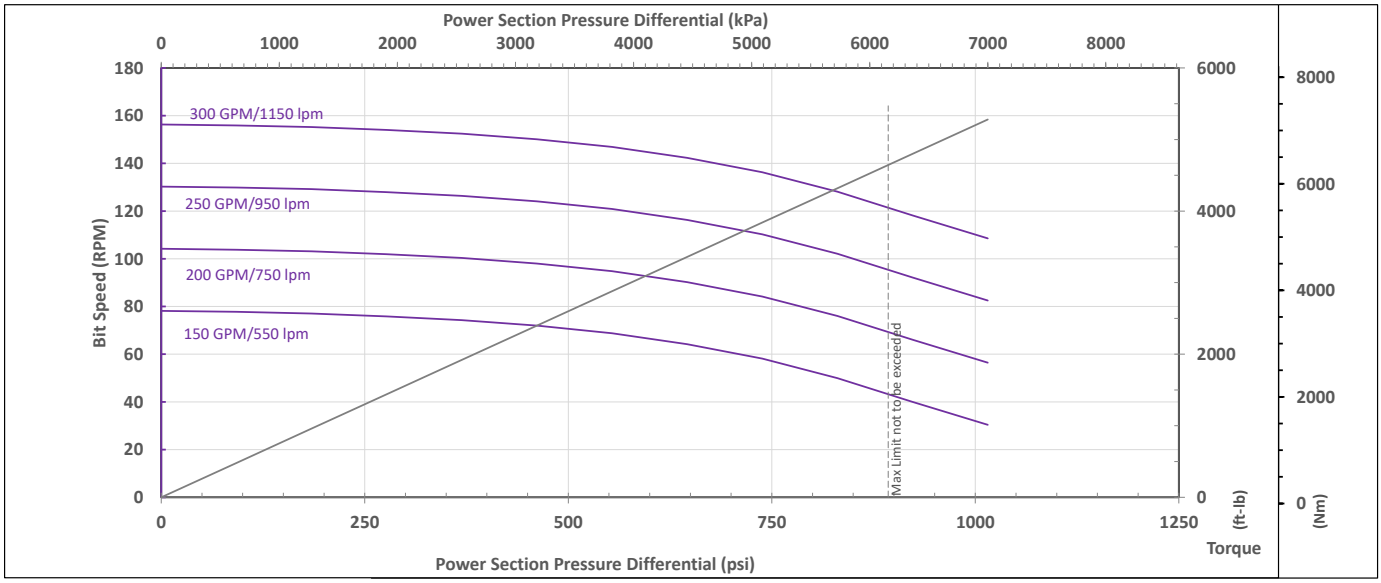
Rotor Specifications		
Overall Length in. [mm]	178.0	[4521]
Contour Length in. [mm]	172.3	[4375]
Major Diameter in. [mm]	2.945	[74.8]
Eccentricity in. [mm]	0.163	[4.1]
Head Diameter in. [mm]	2.750	[69.9]
Gunbored Weight lb [kg]	235	[107]
Solid Weight lb [kg]	274	[124]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	150 - 300	[570 - 950]
Speed Range RPM	80 - 130	
Torque Slope ft-lb/psi [Nm/kPa]	5.200	[1.023]
Rotation rev/Gal [rev/lit]	0.521	[0.138]
Stall Torque ft-lb [Nm]	6,950	[9,400]

Operating Parameters		
Max Diff Pressure psi [kPa]	900	[6,200]
Torque ft-lbs [Nm]	4,650	[6,300]
Max Flow Rate GPM [lpm]	300	[900]
Full Load RPM	121 at 300 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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SPIRA

USA
16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

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POWER SOLUTIONS

CANADA
22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
Phone: (587) 775-7777
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5.00 7/8 LOBES 4.5 STAGES

Stator Specifications		
Overall Length in. [mm]	229.3	[5823]
Tube O.D. in. [mm]	5.00	[127]
Tube I.D. (Terminal) in. [mm]	4.00	[102]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	385	[175]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

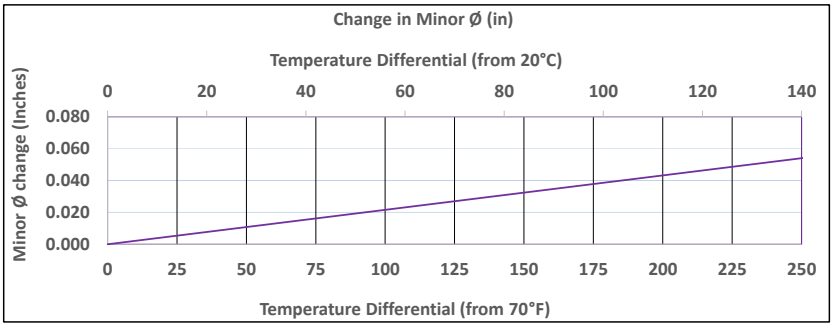
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	0.002	2.745
STD	-	-
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000216 [0.000388]**

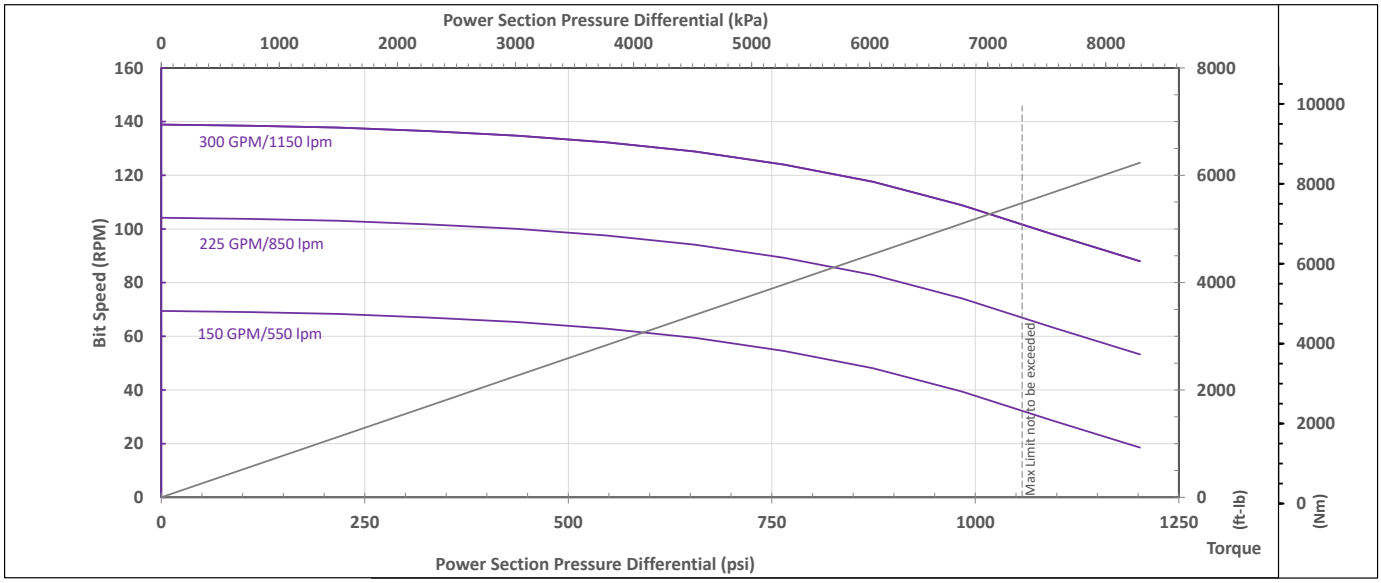
Rotor Specifications		
Overall Length in. [mm]	220.0	[5588]
Contour Length in. [mm]	214.3	[5442]
Major Diameter in. [mm]	3.091	[78.5]
Eccentricity in. [mm]	0.172	[4.4]
Head Diameter in. [mm]	2.750	[69.9]
Gunbored Weight lb [kg]	332	[151]
Solid Weight lb [kg]	380	[173]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	150 - 300	[570 - 1140]
Speed Range RPM	70 - 140	
Torque Slope ft-lb/psi [Nm/kPa]	5.185	[1.020]
Rotation rev/Gal [rev/lit]	0.463	[0.122]
Stall Torque ft-lb [Nm]	8,200	[11,200]

Operating Parameters		
Max Diff Pressure psi [kPa]	1050	[7,300]
Torque ft-lbs [Nm]	5,500	[7,400]
Max Flow Rate GPM [lpm]	300	[1,100]
Full Load RPM	102 at 300 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

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Airdrie, AB, T4A 2H3
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Stator Specifications		
Overall Length in. [mm]	250.0	[6350]
Tube O.D. in. [mm]	5.00	[127]
Tube I.D. (Terminal) in. [mm]	4.00	[102]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	550	[250]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

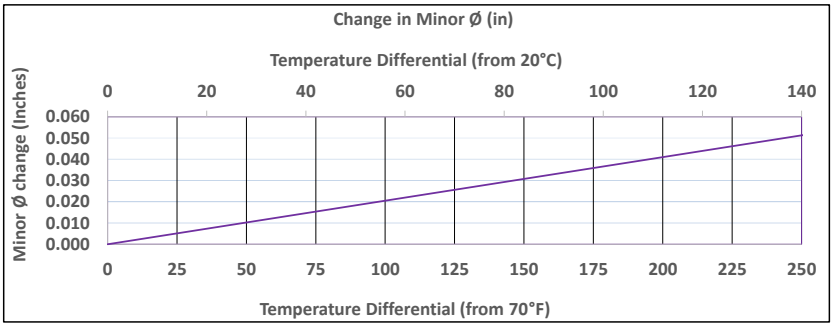
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.011	2.797
0.5T	0.001	2.807
STD	-0.009	2.817
0.5L	-0.019	2.827
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000205 [0.000370]**

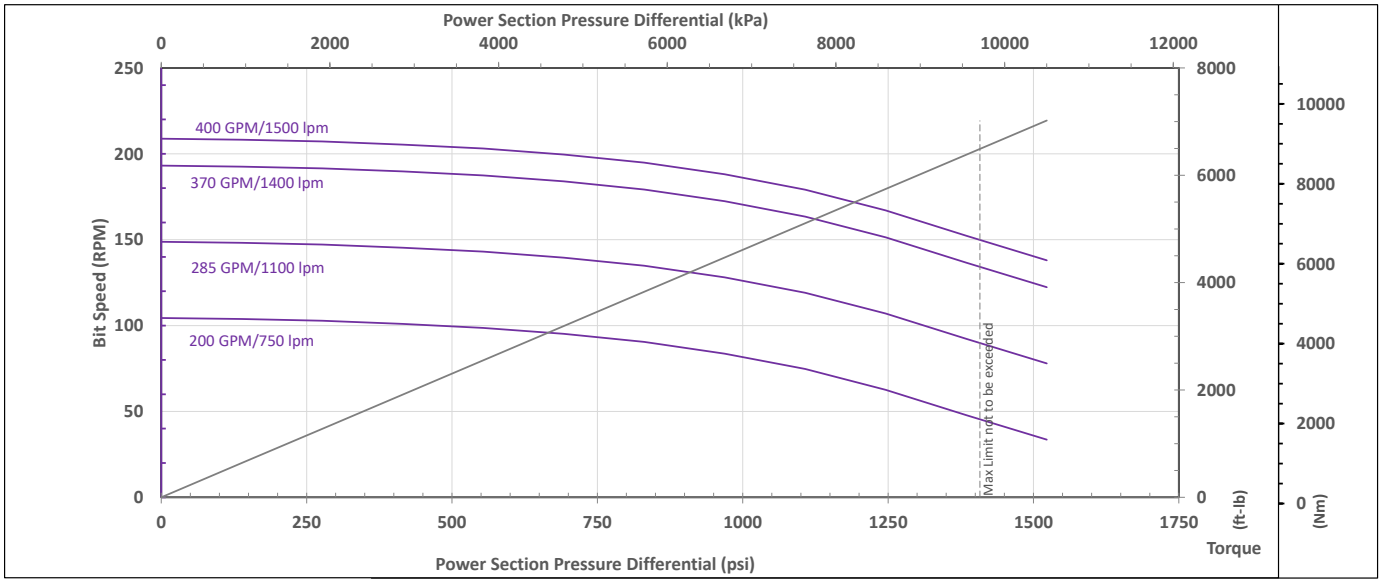
Rotor Specifications		
Overall Length in. [mm]	240.0	[6096]
Contour Length in. [mm]	234.0	[5944]
Major Diameter in. [mm]	3.144	[79.9]
Eccentricity in. [mm]	0.168	[4.3]
Head Diameter in. [mm]	3.250	[82.6]
Gunbored Weight lb [kg]	375	[170]
Solid Weight lb [kg]	428	[194]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	200 - 400	[760 - 1400]
Speed Range RPM	105 - 195	
Torque Slope ft-lb/psi [Nm/kPa]	4.610	[0.907]
Rotation rev/Gal [rev/lit]	0.522	[0.138]
Stall Torque ft-lb [Nm]	9,750	[13,200]

Operating Parameters		
Max Diff Pressure psi [kPa]	1400	[9,700]
Torque ft-lbs [Nm]	6,500	[8,800]
Max Flow Rate GPM [lpm]	400	[1,400]
Full Load RPM	150 at 400 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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Houston, TX, 77032
Phone: (281) 253-4000
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Stator Specifications		
Overall Length in. [mm]	235.0	[5969]
Tube O.D. in. [mm]	5.00	[127]
Tube I.D. (Terminal) in. [mm]	3.88	[99]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	565	[255]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

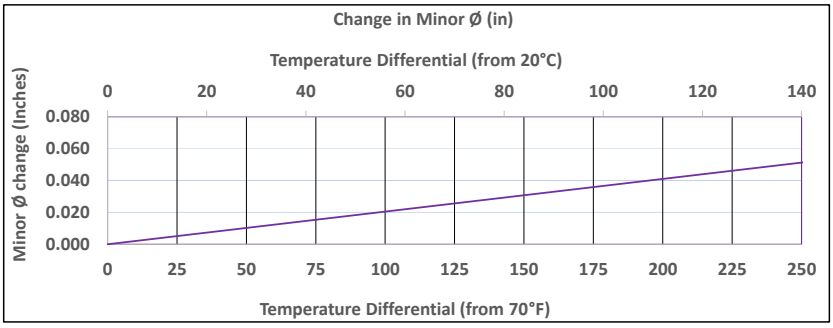
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	0.000	2.689
STD	-0.010	2.699
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000205 [0.000369]**

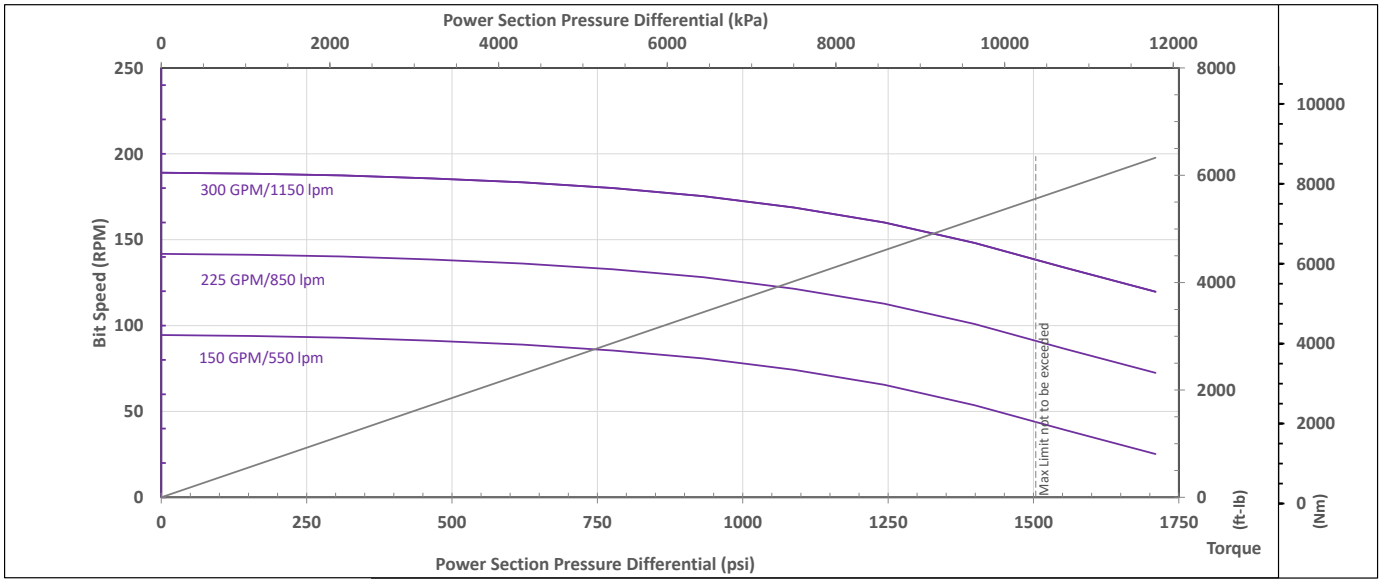
Rotor Specifications		
Overall Length in. [mm]	226.0	[5740]
Contour Length in. [mm]	220.0	[5588]
Major Diameter in. [mm]	3.029	[76.9]
Eccentricity in. [mm]	0.170	[4.3]
Head Diameter in. [mm]	3.250	[82.6]
Gunbored Weight lb [kg]	325	[147]
Solid Weight lb [kg]	375	[170]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	150 - 300	[570 - 1140]
Speed Range RPM	95 - 190	
Torque Slope ft-lb/psi [Nm/kPa]	3.700	[0.728]
Rotation rev/Gal [rev/lit]	0.630	[0.166]
Stall Torque ft-lb [Nm]	8,350	[11,300]

Operating Parameters		
Max Diff Pressure psi [kPa]	1500	[10,400]
Torque ft-lbs [Nm]	5,550	[7,500]
Max Flow Rate GPM [lpm]	300	[1,100]
Full Load RPM	138 at 300 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

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22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
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5.00 8/9 LOBES 6 STAGES

Stator Specifications		
Overall Length in. [mm]	250.0	[6350]
Tube O.D. in. [mm]	5.00	[127]
Tube I.D. (Terminal) in. [mm]	4.00	[102]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	550	[250]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

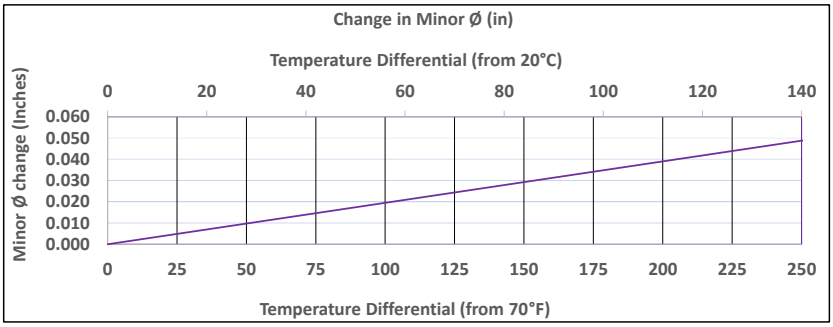
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	-	-
STD	-0.001	2.873
0.5L	-0.011	2.883
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000195 [0.000352]**

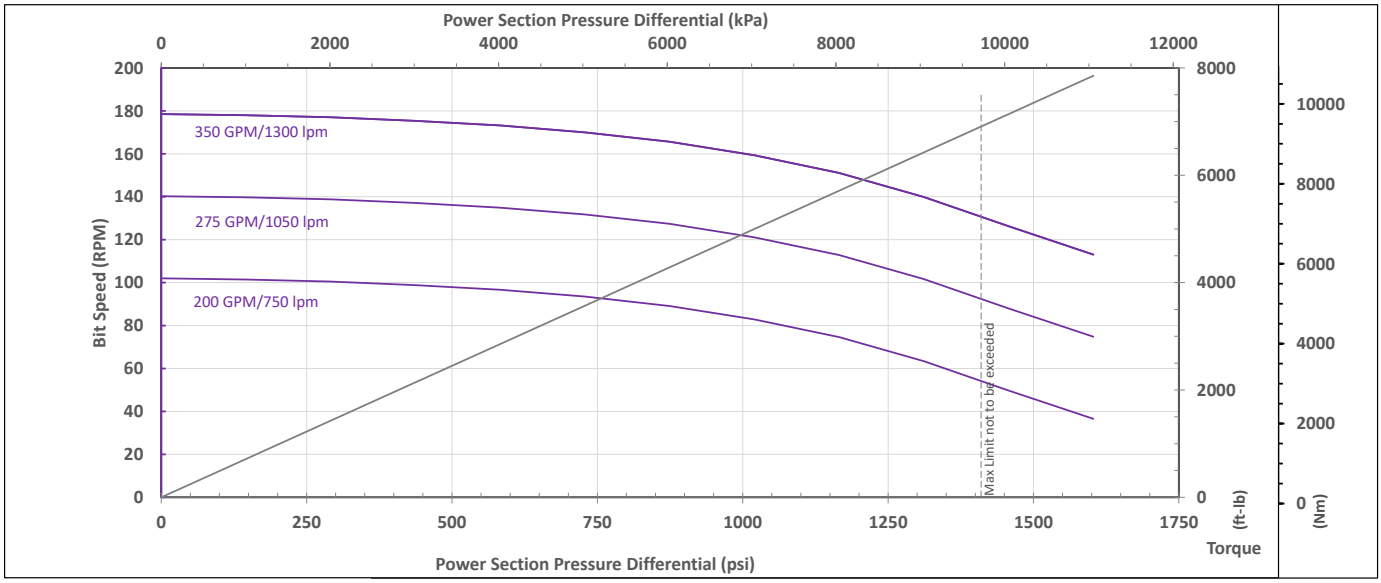
Rotor Specifications		
Overall Length in. [mm]	241.0	[6121]
Contour Length in. [mm]	235.0	[5969]
Major Diameter in. [mm]	3.198	[81.2]
Eccentricity in. [mm]	0.163	[4.1]
Head Diameter in. [mm]	3.380	[85.9]
Gunbored Weight lb [kg]	400	[181]
Solid Weight lb [kg]	453	[205]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	200 - 350	[760 - 1320]
Speed Range RPM	100 - 180	
Torque Slope ft-lb/psi [Nm/kPa]	4.900	[0.964]
Rotation rev/Gal [rev/lit]	0.510	[0.135]
Stall Torque ft-lb [Nm]	10,350	[14,100]

Operating Parameters		
Max Diff Pressure psi [kPa]	1400	[9,700]
Torque ft-lbs [Nm]	6,900	[9,400]
Max Flow Rate GPM [lpm]	350	[1,300]
Full Load RPM	131 at 350 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

CANADA
22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
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5.13 7/8 LOBES 10 STAGES

Stator Specifications		
Overall Length in. [mm]	250.0	[6350]
Tube O.D. in. [mm]	5.13	[130]
Tube I.D. (Terminal) in. [mm]	4.00	[102]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	615	[280]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

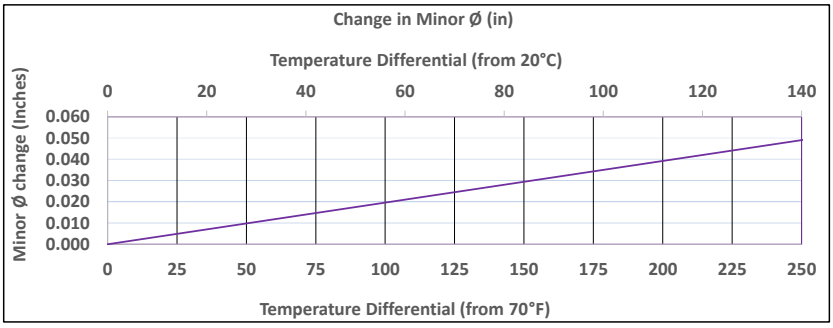
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	-	-
STD	-	-
0.5L	-0.013	2.877
1.0L	-0.023	2.887
Minor Shrinkage (in/°F) [in/°C]		**0.000196 [0.000354]**

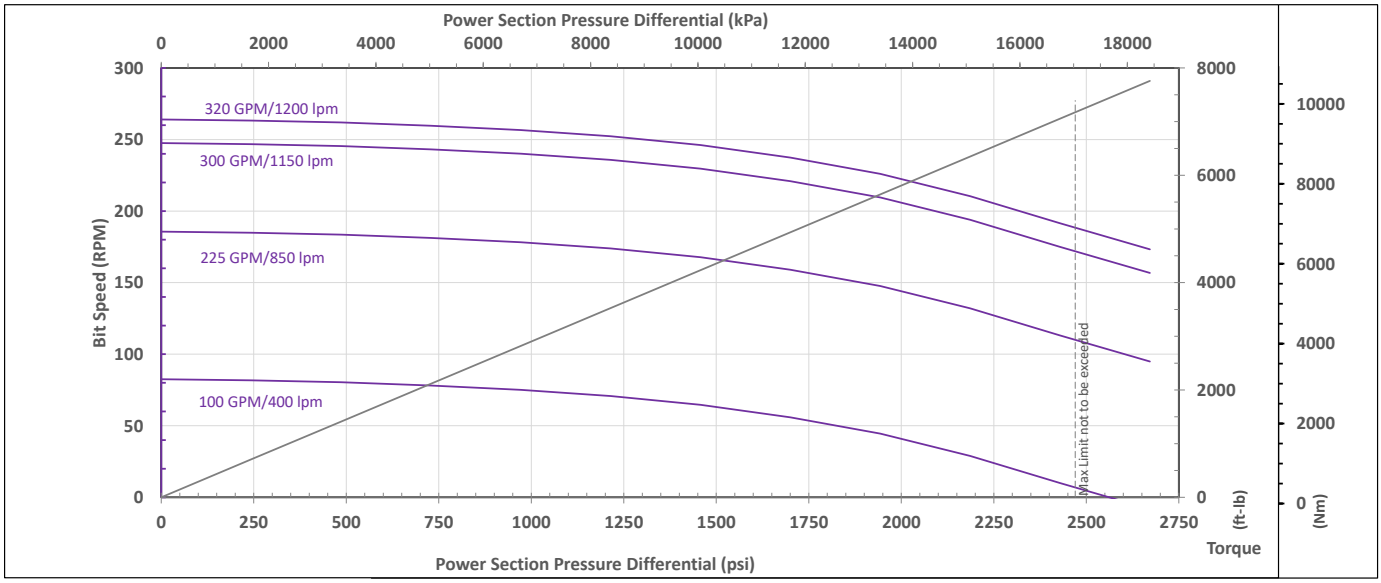
Rotor Specifications		
Overall Length in. [mm]	233.0	[5918]
Contour Length in. [mm]	256.3	[6509]
Major Diameter in. [mm]	3.212	[81.6]
Eccentricity in. [mm]	0.174	[4.4]
Head Diameter in. [mm]	3.500	[88.9]
Gunbored Weight lb [kg]	379	[172]
Solid Weight lb [kg]	430	[195]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	100 - 320	[380 - 1140]
Speed Range RPM	85 - 250	
Torque Slope ft-lb/psi [Nm/kPa]	2.904	[0.571]
Rotation rev/Gal [rev/lit]	0.825	[0.218]
Stall Torque ft-lb [Nm]	10,750	[14,600]

Operating Parameters		
Max Diff Pressure psi [kPa]	2450	[17,000]
Torque ft-lbs [Nm]	7,150	[9,700]
Max Flow Rate GPM [lpm]	320	[1,100]
Full Load RPM	188 at 320 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

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5.25 5/6 LOBES 11.8 STAGES

Stator Specifications		
Overall Length in. [mm]	275.0	[6985]
Tube O.D. in. [mm]	5.25	[133]
Tube I.D. (Terminal) in. [mm]	4.25	[108]
Rubber Cutback Top in. [mm]	9.0	[228.6]
Rubber Cutback Btm in. [mm]	9.0	[228.6]
Weight lb [kg]	570	[260]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

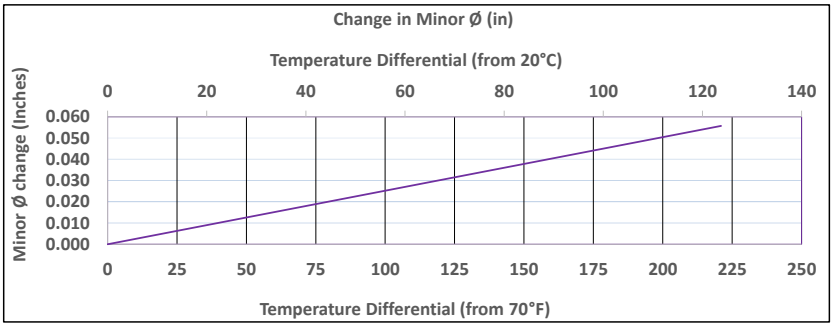
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	-	-
STD	-0.002	3.049
0.5L	-0.012	3.059
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000252 [0.000454]**

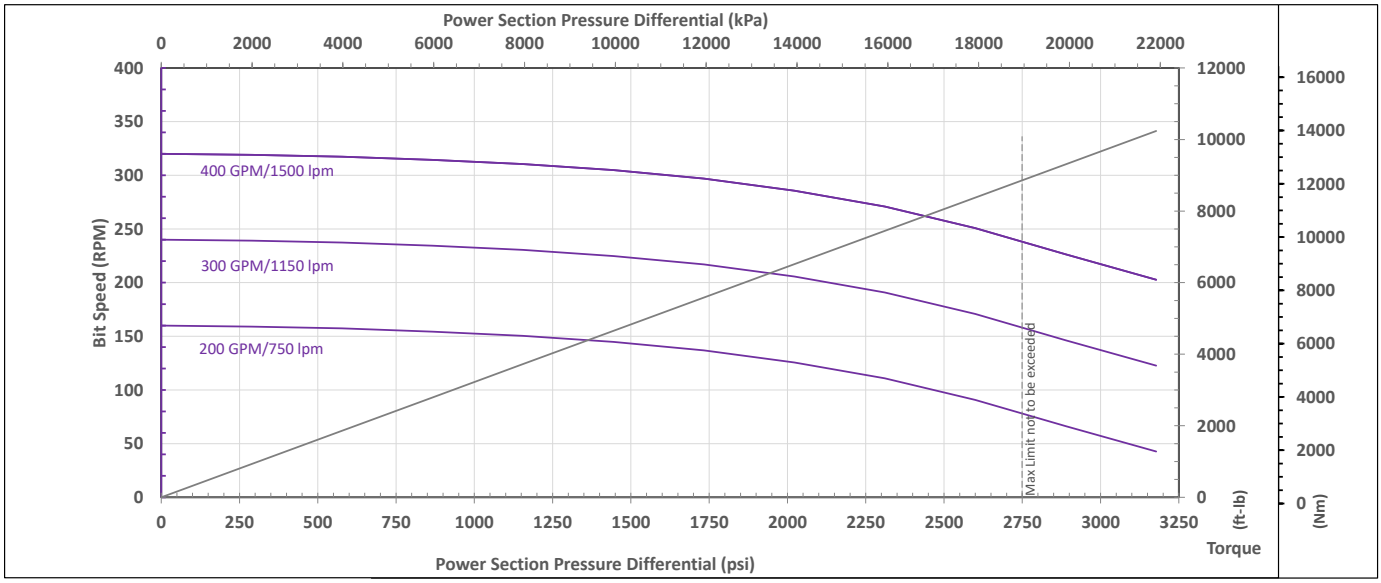
Rotor Specifications		
Overall Length in. [mm]	264.0	[6706]
Contour Length in. [mm]	258.0	[6553]
Major Diameter in. [mm]	3.555	[90.3]
Eccentricity in. [mm]	0.254	[6.5]
Head Diameter in. [mm]	3.500	[88.9]
Gunbored Weight lb [kg]	482	[219]
Solid Weight lb [kg]	540	[245]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	200 - 400	[760 - 1510]
Speed Range RPM	160 - 320	
Torque Slope ft-lb/psi [Nm/kPa]	3.222	[0.634]
Rotation rev/Gal [rev/lit]	0.800	[0.211]
Stall Torque ft-lb [Nm]	13,300	[18,000]

Operating Parameters		
Max Diff Pressure psi [kPa]	2750	[19,000]
Torque ft-lbs [Nm]	8,850	[12,000]
Max Flow Rate GPM [lpm]	400	[1,500]
Full Load RPM	238 at 400 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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Model last revised: 2024-07-31

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16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

PARADIGM
POWER SOLUTIONS

CANADA
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Airdrie, AB, T4A 2H3
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5.25 7/8 LOBES 8.5 STAGES FATBOY™

Stator Specifications		
Overall Length in. [mm]	275.0	[6985]
Tube O.D. in. [mm]	5.25	[133]
Tube I.D. (Terminal) in. [mm]	4.10	[104]
Rubber Cutback Top in. [mm]	11.0	[279.4]
Rubber Cutback Btm in. [mm]	11.0	[279.4]
Weight lb [kg]	615	[280]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

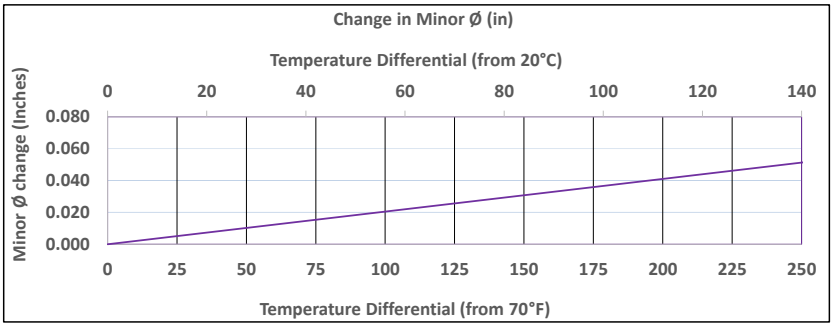
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	0.005	3.205
STD	-0.005	3.215
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000205 [0.000370]**

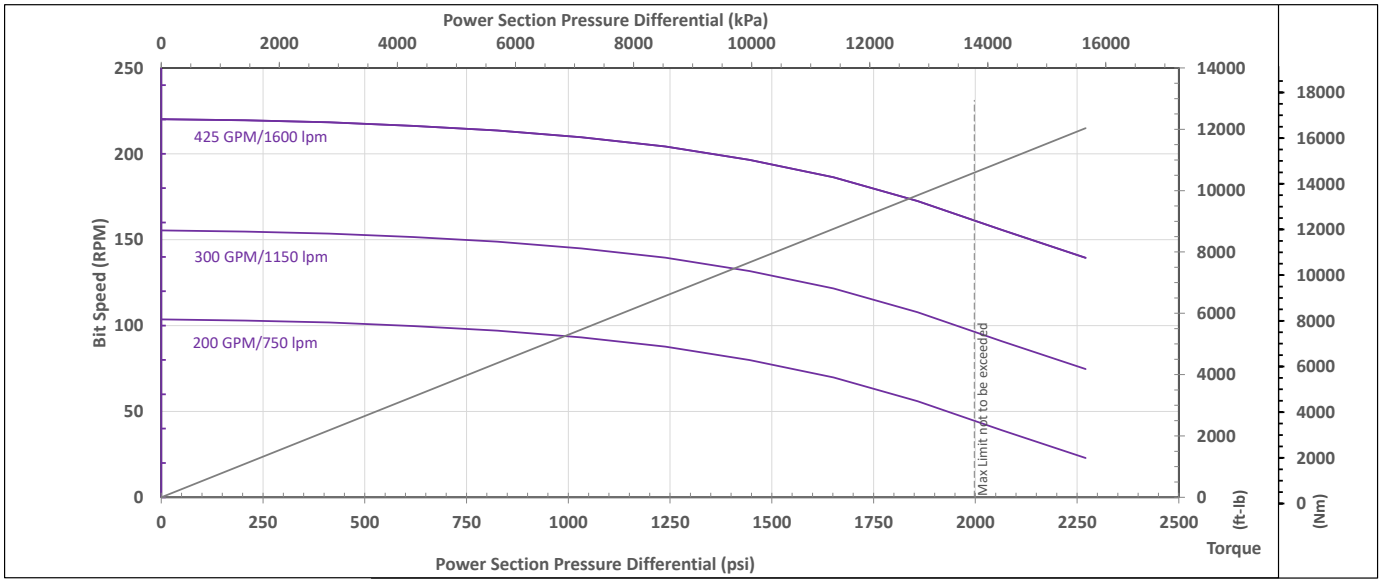
Rotor Specifications		
Overall Length in. [mm]	262.3	[6661]
Contour Length in. [mm]	256.3	[6509]
Major Diameter in. [mm]	3.609	[91.7]
Eccentricity in. [mm]	0.200	[5.1]
Head Diameter in. [mm]	3.500	[88.9]
Gunbored Weight lb [kg]	494	[224]
Solid Weight lb [kg]	552	[250]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	200 - 425	[760 - 1610]
Speed Range RPM	105 - 220	
Torque Slope ft-lb/psi [Nm/kPa]	5.300	[1.042]
Rotation rev/Gal [rev/lit]	0.518	[0.137]
Stall Torque ft-lb [Nm]	15,900	[21,500]

Operating Parameters		
Max Diff Pressure psi [kPa]	2000	[13,800]
Torque ft-lbs [Nm]	10,600	[14,400]
Max Flow Rate GPM [lpm]	425	[1,600]
Full Load RPM	161 at 425 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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USA
16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

CANADA
22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
Phone: (587) 775-7777
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6.50 7/8 LOBES 4.8 STAGES

Stator Specifications		
Overall Length in. [mm]	204.0	[5182]
Tube O.D. in. [mm]	6.50	[165]
Tube I.D. (Terminal) in. [mm]	5.00	[127]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	840	[380]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

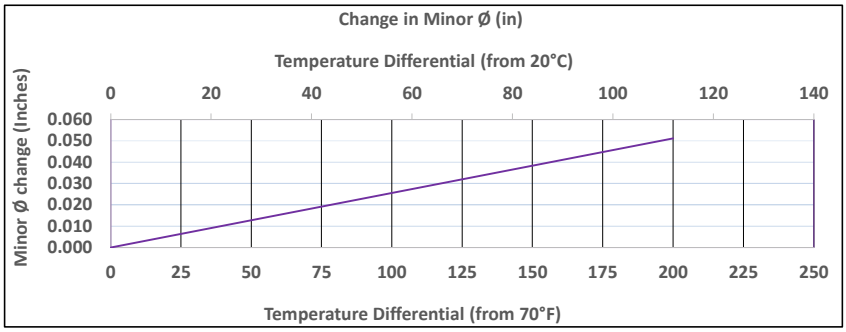
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	-	-
STD	0.003	3.525
0.5L	-0.007	3.535
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000256 [0.000461]**

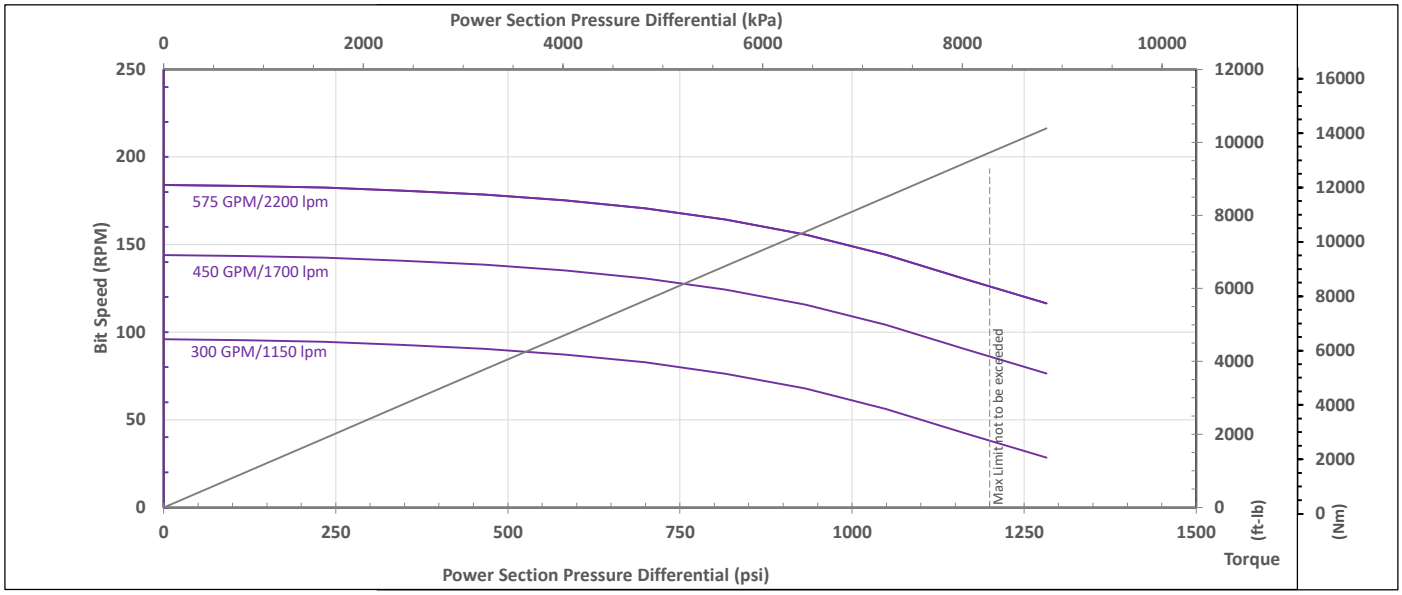
Rotor Specifications		
Overall Length in. [mm]	194.2	[4933]
Contour Length in. [mm]	188.2	[4780]
Major Diameter in. [mm]	3.980	[101.1]
Eccentricity in. [mm]	0.226	[5.7]
Head Diameter in. [mm]	4.000	[101.6]
Gunbored Weight lb [kg]	475	[215]
Solid Weight lb [kg]	542	[246]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	300 - 575	[1140 - 2180]
Speed Range RPM	95 - 185	
Torque Slope ft-lb/psi [Nm/kPa]	8.100	[1.593]
Rotation rev/Gal [rev/lit]	0.320	[0.085]
Stall Torque ft-lb [Nm]	14,600	[19,800]

Operating Parameters		
Max Diff Pressure psi [kPa]	1200	[8,300]
Torque ft-lbs [Nm]	9,700	[13,200]
Max Flow Rate GPM [lpm]	575	[2,150]
Full Load RPM	126 at 575 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

CANADA
22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
Phone: (587) 775-7777
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6.75 4/5 LOBES 7 STAGES

Stator Specifications		
Overall Length in. [mm]	210.0	[5334]
Tube O.D. in. [mm]	6.75	[171]
Tube I.D. (Terminal) in. [mm]	5.50	[140]
Rubber Cutback Top in. [mm]	7.5	[190.5]
Rubber Cutback Btm in. [mm]	7.5	[190.5]
Weight lb [kg]	800	[365]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

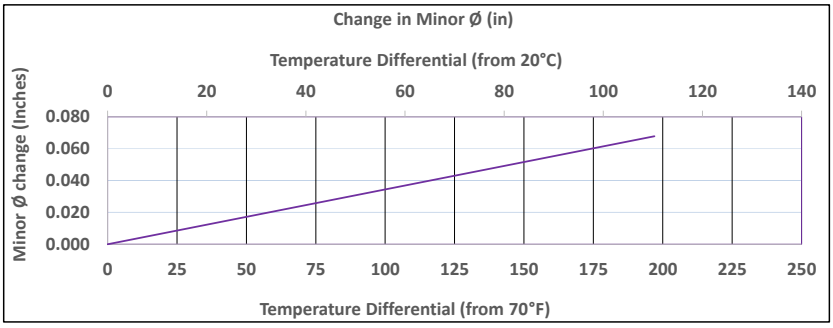
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.012	3.498
0.5T	0.002	3.508
STD	-0.008	3.518
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000344 [0.000619]**

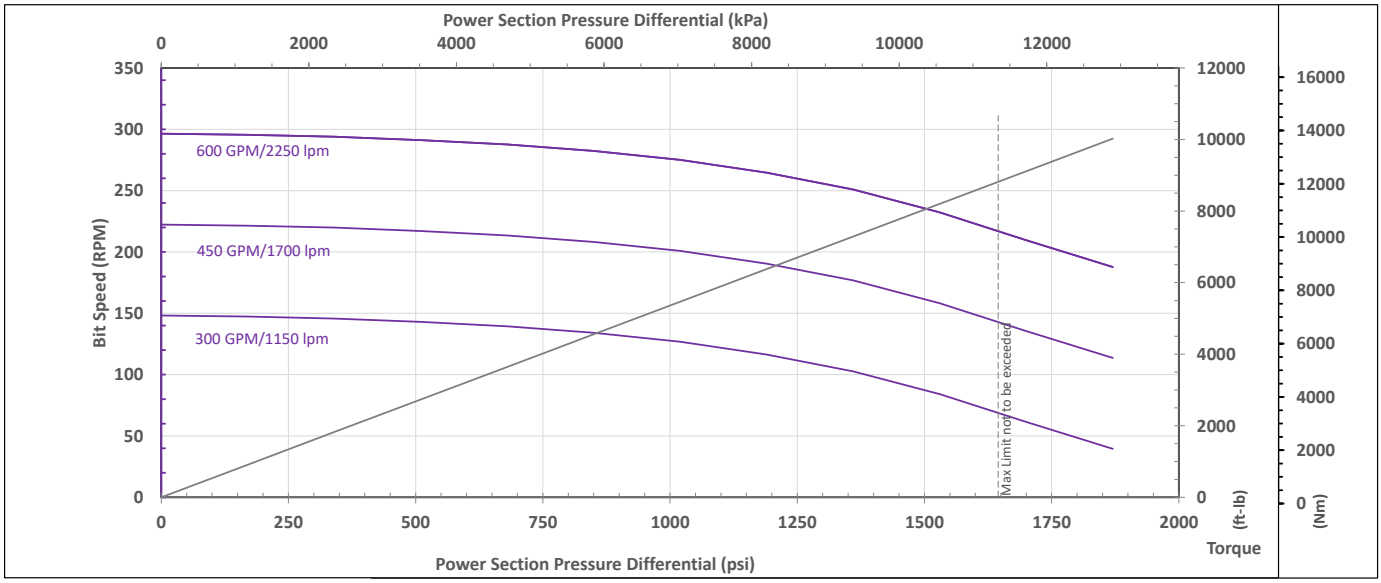
Rotor Specifications		
Overall Length in. [mm]	202.5	[5144]
Contour Length in. [mm]	195.5	[4966]
Major Diameter in. [mm]	4.220	[107.2]
Eccentricity in. [mm]	0.355	[9.0]
Head Diameter in. [mm]	4.000	[101.6]
Gunbored Weight lb [kg]	385	[175]
Solid Weight lb [kg]	563	[255]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	300 - 600	[1140 - 2270]
Speed Range RPM	150 - 295	
Torque Slope ft-lb/psi [Nm/kPa]	5.360	[1.054]
Rotation rev/Gal [rev/lit]	0.494	[0.131]
Stall Torque ft-lb [Nm]	13,250	[17,900]

Operating Parameters		
Max Diff Pressure psi [kPa]	1650	[11,300]
Torque ft-lbs [Nm]	8,800	[12,000]
Max Flow Rate GPM [lpm]	600	[2,250]
Full Load RPM	217 at 600 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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USA
16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

CANADA
22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
Phone: (587) 775-7777
www.spirasystems.com

6.75 6/7 LOBES 5 STAGES

Stator Specifications		
Overall Length in. [mm]	200.0	[5080]
Tube O.D. in. [mm]	6.75	[171]
Tube I.D. (Terminal) in. [mm]	5.50	[140]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	760	[345]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

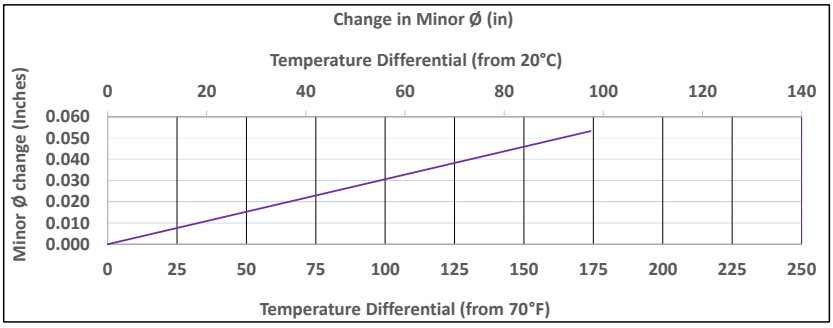
Rotor Specifications		
Overall Length in. [mm]	194.0	[4928]
Contour Length in. [mm]	188.0	[4775]
Major Diameter in. [mm]	4.316	[109.6]
Eccentricity in. [mm]	0.288	[7.3]
Head Diameter in. [mm]	4.000	[101.6]
Gunbored Weight lb [kg]	440	[200]
Solid Weight lb [kg]	611	[277]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

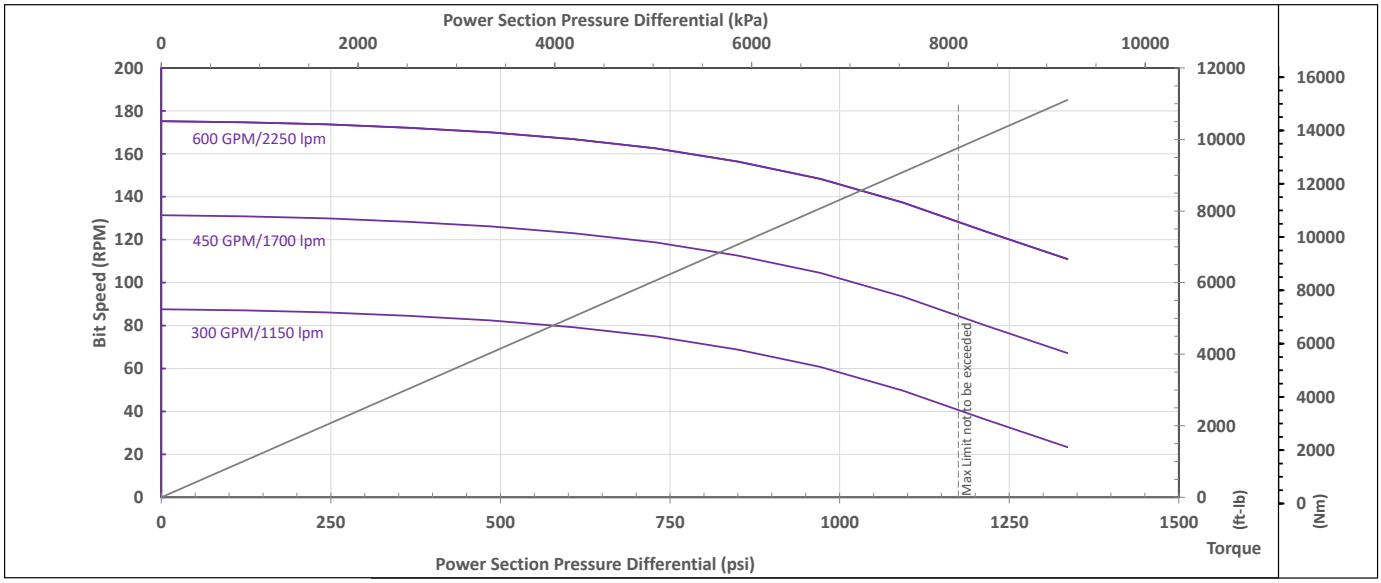
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	0.010	3.730
STD	0.000	3.740
0.5L	-0.010	3.750
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000306 [0.000551]**

Performance Specifications		
Flow Range GPM [lpm]	300 - 600	[1140 - 2270]
Speed Range RPM	90 - 175	
Torque Slope ft-lb/psi [Nm/kPa]	8.313	[1.635]
Rotation rev/Gal [rev/lit]	0.292	[0.077]
Stall Torque ft-lb [Nm]	14,650	[19,900]

Operating Parameters		
Max Diff Pressure psi [kPa]	1200	[8,100]
Torque ft-lbs [Nm]	9,750	[13,200]
Max Flow Rate GPM [lpm]	600	[2,250]
Full Load RPM	128 at 600 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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USA
16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

CANADA
22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
Phone: (587) 775-7777
www.spirasystems.com

6.75 7/8 LOBES 5 STAGES

Stator Specifications		
Overall Length in. [mm]	194.5	[4940]
Tube O.D. in. [mm]	6.75	[171]
Tube I.D. (Terminal) in. [mm]	5.50	[140]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	640	[290]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

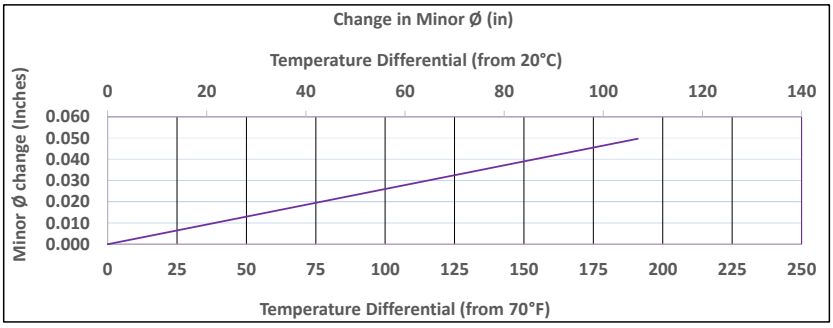
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.022	3.986
0.5T	0.012	3.996
STD	0.002	4.006
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000260 [0.000468]**

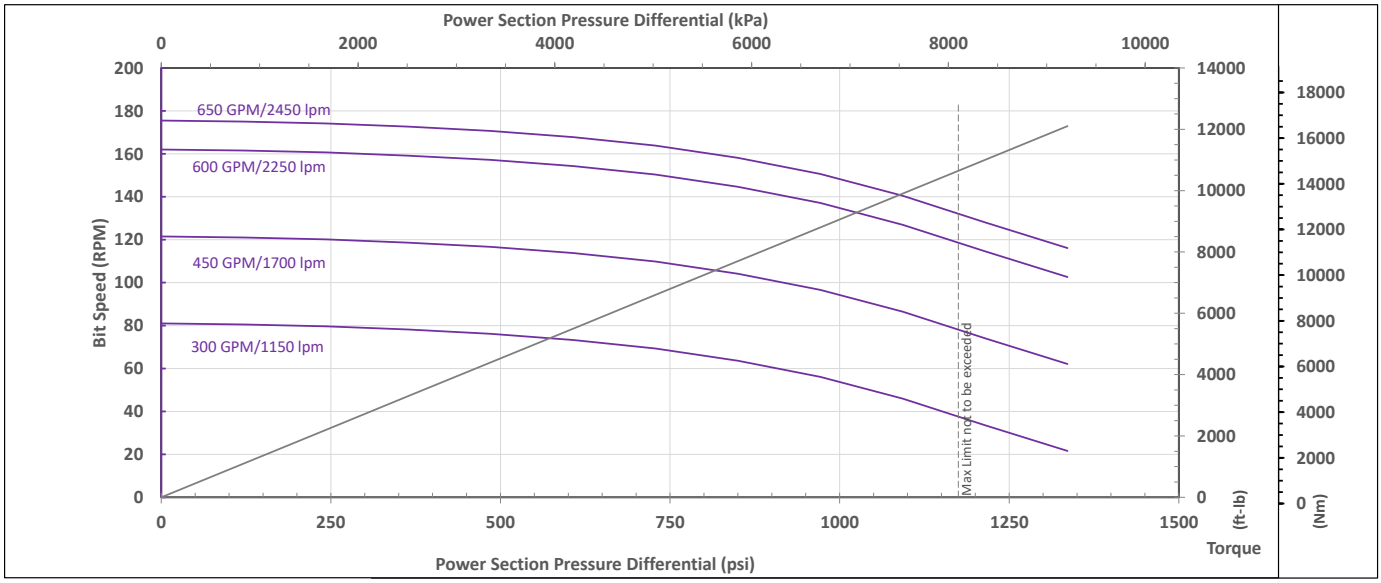
Rotor Specifications		
Overall Length in. [mm]	188.0	[4775]
Contour Length in. [mm]	181.0	[4597]
Major Diameter in. [mm]	4.520	[114.8]
Eccentricity in. [mm]	0.256	[6.5]
Head Diameter in. [mm]	4.000	[101.6]
Gunbored Weight lb [kg]	510	[231]
Solid Weight lb [kg]	675	[306]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	300 - 650	[1140 - 2270]
Speed Range RPM	80 - 160	
Torque Slope ft-lb/psi [Nm/kPa]	9.060	[1.782]
Rotation rev/Gal [rev/lit]	0.270	[0.071]
Stall Torque ft-lb [Nm]	15,950	[21,700]

Operating Parameters		
Max Diff Pressure psi [kPa]	1200	[8,100]
Torque ft-lbs [Nm]	10,650	[14,400]
Max Flow Rate GPM [lpm]	650	[2,250]
Full Load RPM	132 at 650 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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USA
16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

CANADA
22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
Phone: (587) 775-7777
www.spirasystems.com

6.75 7/8 LOBES 5.7 STAGES SX2

Stator Specifications		
Overall Length in. [mm]	260.0	[6604]
Tube O.D. in. [mm]	6.75	[171]
Tube I.D. (Terminal) in. [mm]	5.50	[140]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	735	[335]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

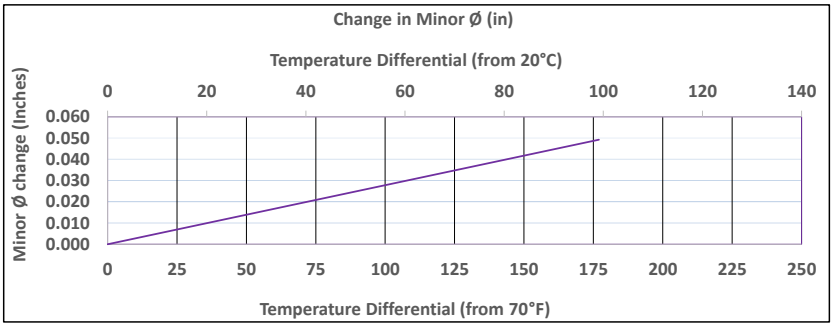
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.019	4.132
0.5T	0.009	4.142
STD	-0.001	4.152
0.5L	-0.011	4.162
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000278 [0.000500]**

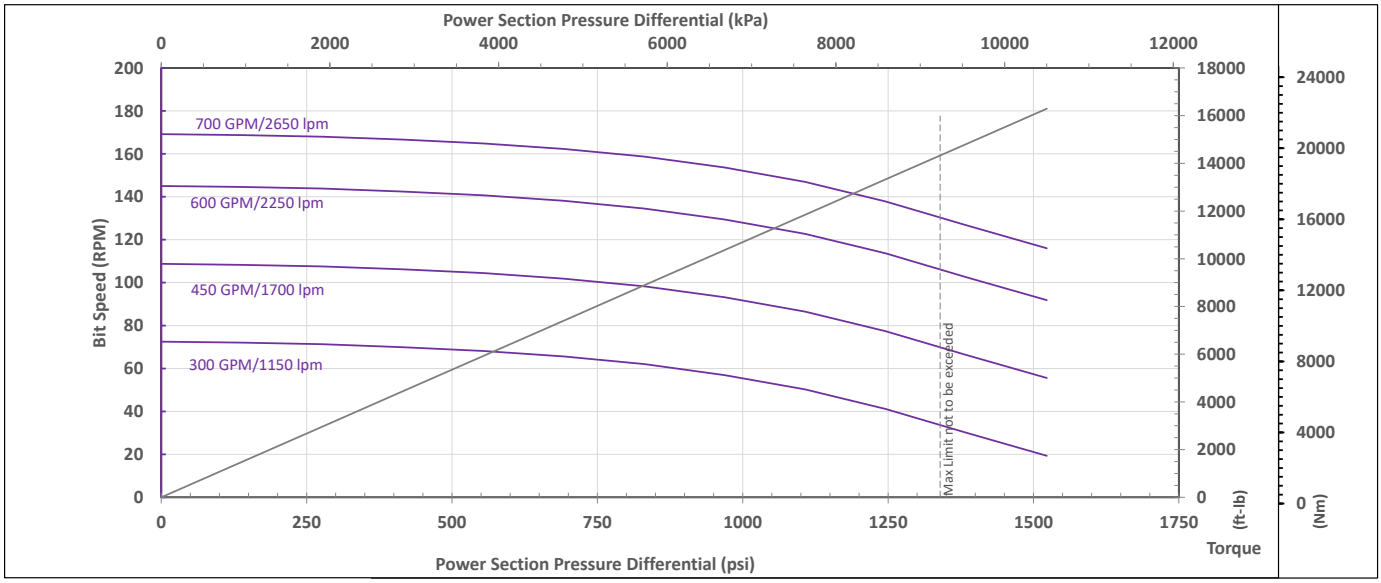
Rotor Specifications		
Overall Length in. [mm]	252.0	[6401]
Contour Length in. [mm]	245.0	[6223]
Major Diameter in. [mm]	4.644	[118]
Eccentricity in. [mm]	0.247	[6.3]
Head Diameter in. [mm]	4.500	[114.3]
Gunbored Weight lb [kg]	748	[339]
Solid Weight lb [kg]	970	[440]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	300 - 700	[1140 - 2270]
Speed Range RPM	75 - 145	
Torque Slope ft-lb/psi [Nm/kPa]	10.698	[2.104]
Rotation rev/Gal [rev/lit]	0.242	[0.064]
Stall Torque ft-lb [Nm]	21,500	[29,100]

Operating Parameters		
Max Diff Pressure psi [kPa]	1350	[9,200]
Torque ft-lbs [Nm]	14,350	[19,400]
Max Flow Rate GPM [lpm]	700	[2,250]
Full Load RPM	130 at 700 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

CANADA
22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
Phone: (587) 775-7777
www.spirasystems.com

6.75 7/8 LOBES 6 STAGES

Stator Specifications		
Overall Length in. [mm]	235.0	[5969]
Tube O.D. in. [mm]	6.75	[171]
Tube I.D. (Terminal) in. [mm]	5.50	[140]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	875	[400]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

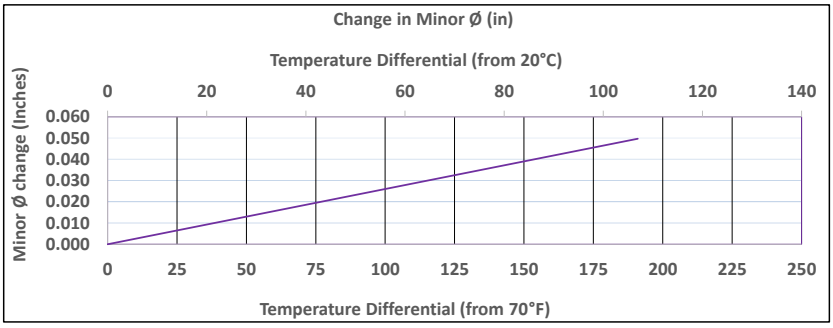
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	0.012	3.996
STD	0.002	4.006
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000260 [0.000468]**

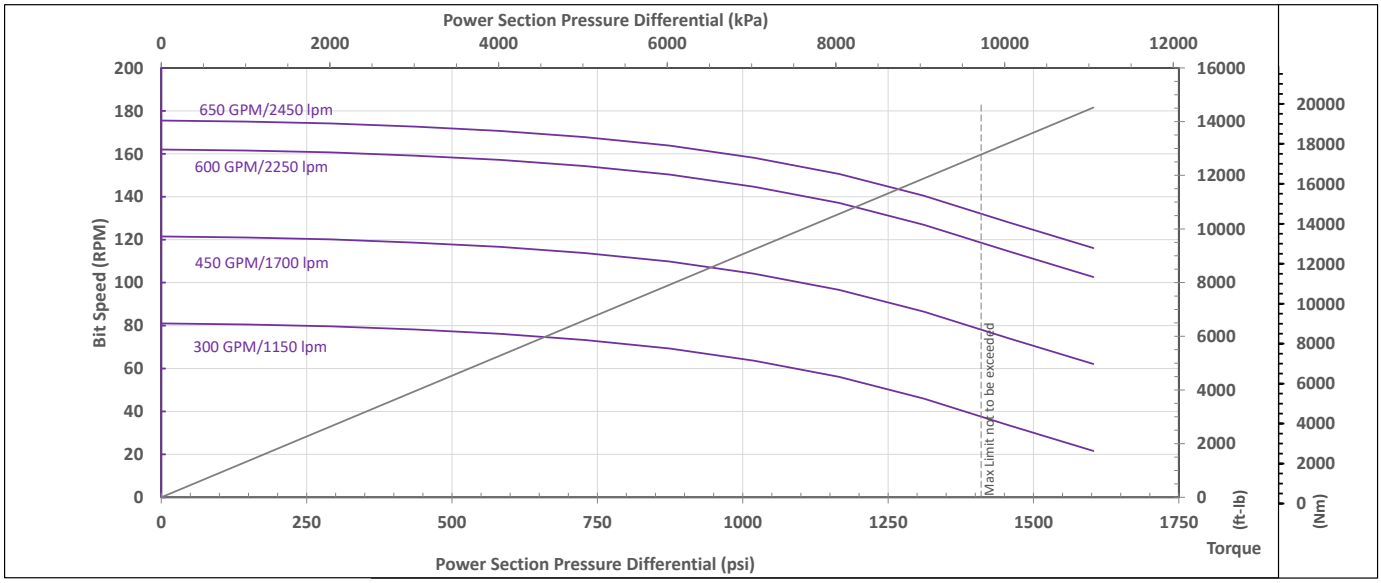
Rotor Specifications		
Overall Length in. [mm]	223.0	[5664]
Contour Length in. [mm]	216.0	[5486]
Major Diameter in. [mm]	4.520	[114.8]
Eccentricity in. [mm]	0.256	[6.5]
Head Diameter in. [mm]	4.500	[114.3]
Gunbored Weight lb [kg]	610	[277]
Solid Weight lb [kg]	806	[366]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	300 - 650	[1140 - 2270]
Speed Range RPM	80 - 160	
Torque Slope ft-lb/psi [Nm/kPa]	9.060	[1.782]
Rotation rev/Gal [rev/lit]	0.270	[0.071]
Stall Torque ft-lb [Nm]	19,150	[26,000]

Operating Parameters		
Max Diff Pressure psi [kPa]	1400	[9,700]
Torque ft-lbs [Nm]	12,750	[17,300]
Max Flow Rate GPM [lpm]	650	[2,250]
Full Load RPM	132 at 650 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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6.75 7/8 LOBES 6.4 STAGES

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Stator Specifications		
Overall Length in. [mm]	245.0	[6223]
Tube O.D. in. [mm]	6.75	[171]
Tube I.D. (Terminal) in. [mm]	5.50	[140]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	835	[380]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

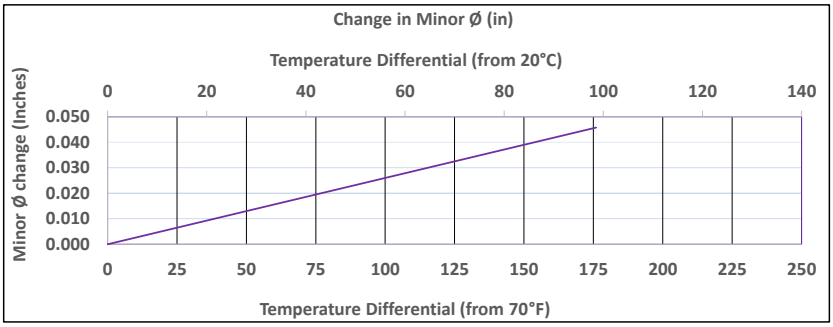
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	0.012	3.996
STD	0.002	4.006
0.5L	-0.008	4.016
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000260 [0.000467]**

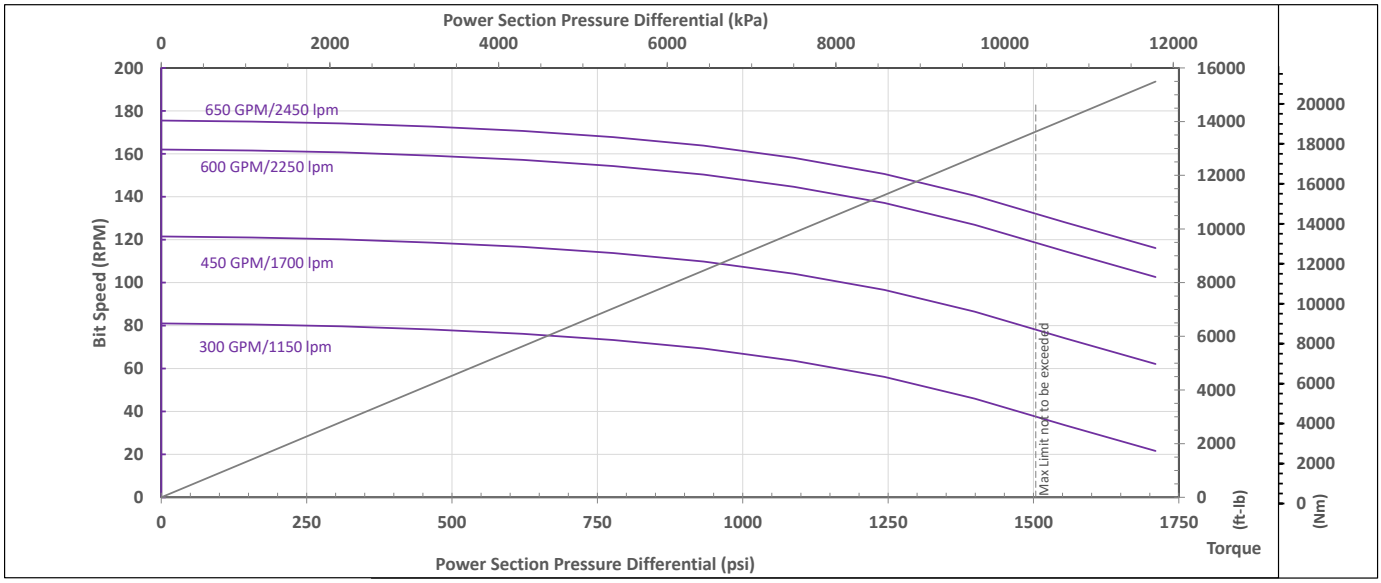
Rotor Specifications		
Overall Length in. [mm]	238.5	[6058]
Contour Length in. [mm]	231.5	[5880]
Major Diameter in. [mm]	4.520	[114.8]
Eccentricity in. [mm]	0.256	[6.5]
Head Diameter in. [mm]	4.000	[101.6]
Gunbored Weight lb [kg]	646	[293]
Solid Weight lb [kg]	856	[388]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	300 - 650	[1140 - 2270]
Speed Range RPM	80 - 160	
Torque Slope ft-lb/psi [Nm/kPa]	9.060	[1.782]
Rotation rev/Gal [rev/lit]	0.270	[0.071]
Stall Torque ft-lb [Nm]	20,450	[27,700]

Operating Parameters		
Max Diff Pressure psi [kPa]	1500	[10,400]
Torque ft-lbs [Nm]	13,650	[18,500]
Max Flow Rate GPM [lpm]	650	[2,250]
Full Load RPM	132 at 650 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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Stator Specifications		
Overall Length in. [mm]	260.0	[6604]
Tube O.D. in. [mm]	6.75	[171]
Tube I.D. (Terminal) in. [mm]	5.50	[140]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	820	[370]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

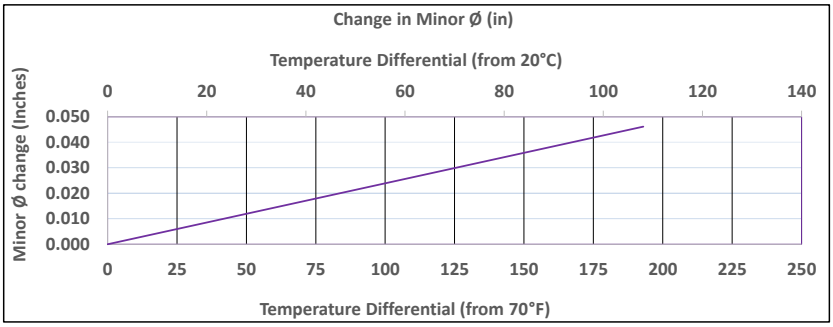
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	0.015	4.368
STD	0.005	4.378
0.5L	-0.005	4.388
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000239 [0.000430]**

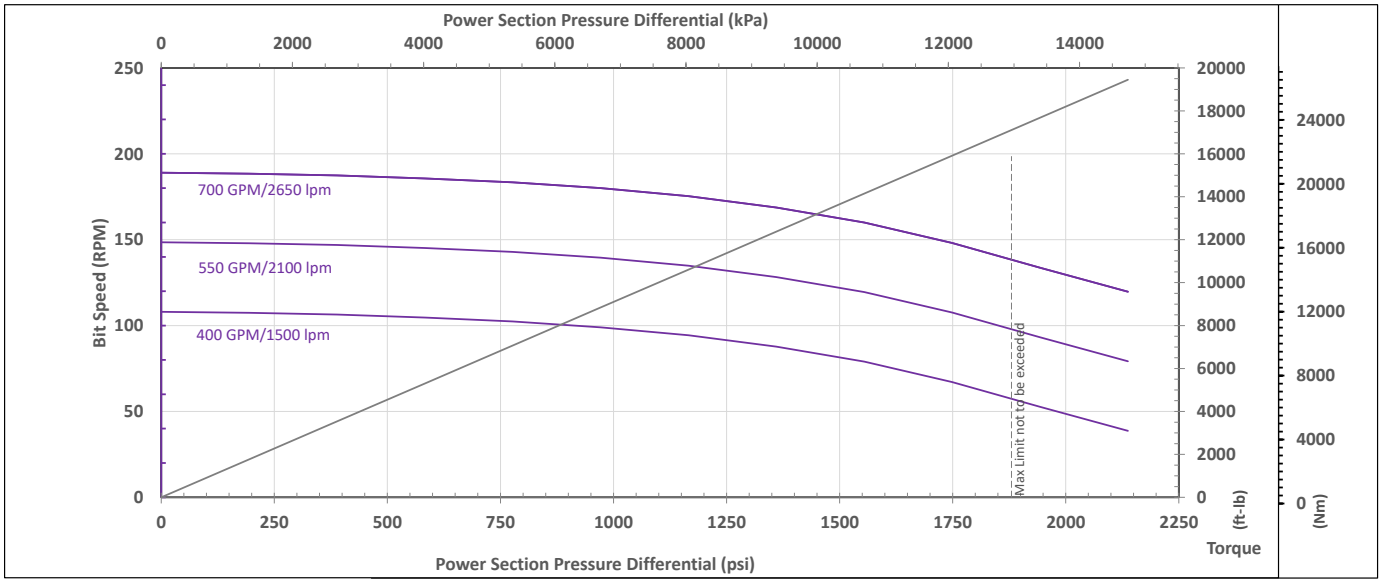
Rotor Specifications		
Overall Length in. [mm]	252.0	[6401]
Contour Length in. [mm]	245.0	[6223]
Major Diameter in. [mm]	4.830	[122.7]
Eccentricity in. [mm]	0.224	[5.7]
Head Diameter in. [mm]	4.625	[117.5]
Gunbored Weight lb [kg]	865	[392]
Solid Weight lb [kg]	1087	[493]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	400 - 700	[1510 - 2650]
Speed Range RPM	110 - 190	
Torque Slope ft-lb/psi [Nm/kPa]	9.100	[1.789]
Rotation rev/Gal [rev/lit]	0.270	[0.071]
Stall Torque ft-lb [Nm]	25,650	[34,800]

Operating Parameters		
Max Diff Pressure psi [kPa]	1900	[13,000]
Torque ft-lbs [Nm]	17,100	[23,200]
Max Flow Rate GPM [lpm]	700	[2,600]
Full Load RPM	138 at 700 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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Houston, TX, 77032
Phone: (281) 253-4000
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7.00 6/7 LOBES 8.4 STAGES

Stator Specifications		
Overall Length in. [mm]	275.0	[6985]
Tube O.D. in. [mm]	7.00	[178]
Tube I.D. (Terminal) in. [mm]	5.75	[146]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	775	[350]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

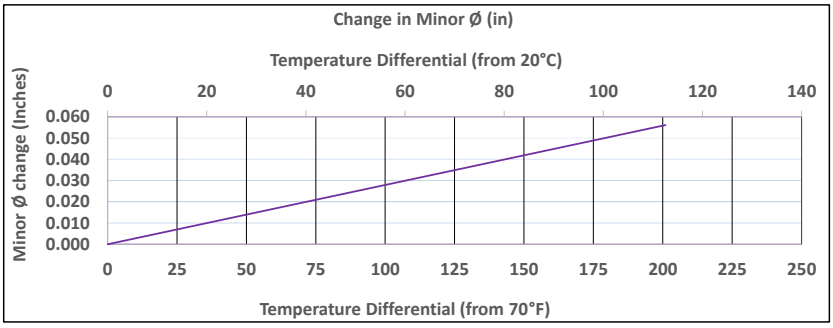
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	-	-
STD	-0.005	4.148
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000279 [0.000502]**

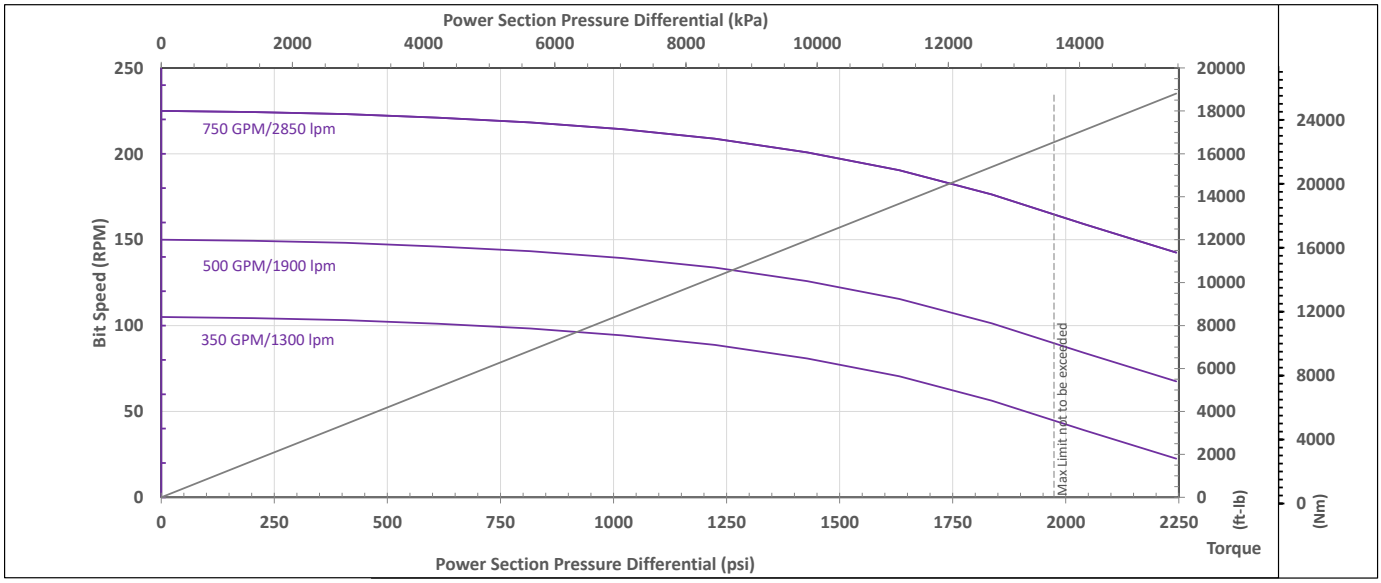
Rotor Specifications		
Overall Length in. [mm]	267.0	[6782]
Contour Length in. [mm]	259.0	[6579]
Major Diameter in. [mm]	4.747	[120.6]
Eccentricity in. [mm]	0.302	[7.7]
Head Diameter in. [mm]	4.750	[120.7]
Gunbored Weight lb [kg]	797	[362]
Solid Weight lb [kg]	1032	[468]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	350 - 750	[1320 - 2840]
Speed Range RPM	105 - 225	
Torque Slope ft-lb/psi [Nm/kPa]	8.380	[1.648]
Rotation rev/Gal [rev/lit]	0.300	[0.079]
Stall Torque ft-lb [Nm]	24,800	[33,600]

Operating Parameters		
Max Diff Pressure psi [kPa]	1950	[13,600]
Torque ft-lbs [Nm]	16,550	[22,400]
Max Flow Rate GPM [lpm]	750	[2,800]
Full Load RPM	165 at 750 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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Stator Specifications		
Overall Length in. [mm]	275.0	[6985]
Tube O.D. in. [mm]	7.00	[178]
Tube I.D. (Terminal) in. [mm]	5.75	[146]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	1070	[485]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

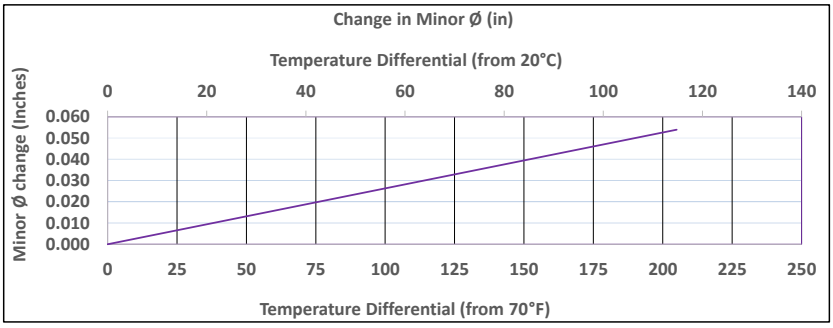
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	0.008	4.230
STD	-0.002	4.240
0.5L	-0.012	4.250
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000263 [0.000473]**

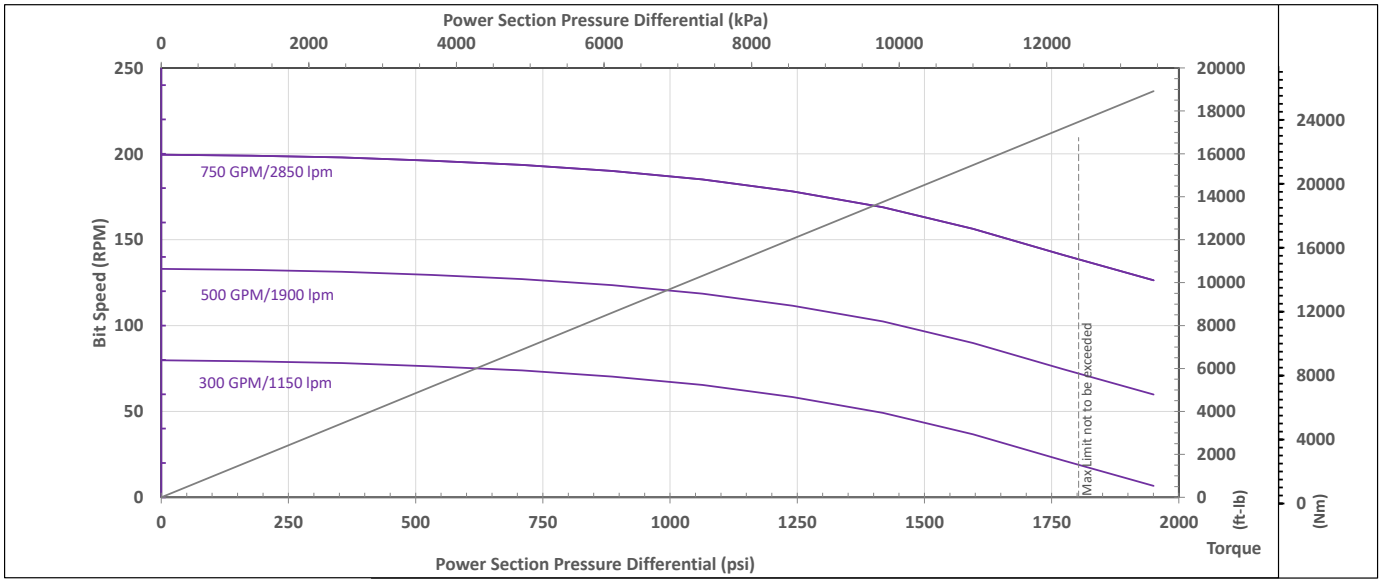
Rotor Specifications		
Overall Length in. [mm]	268.0	[6807]
Contour Length in. [mm]	260.0	[6604]
Major Diameter in. [mm]	4.752	[120.7]
Eccentricity in. [mm]	0.257	[6.5]
Head Diameter in. [mm]	4.750	[120.7]
Gunbored Weight lb [kg]	845	[383]
Solid Weight lb [kg]	1081	[490]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	300 - 750	[1140 - 2840]
Speed Range RPM	80 - 200	
Torque Slope ft-lb/psi [Nm/kPa]	9.700	[1.907]
Rotation rev/Gal [rev/lit]	0.266	[0.070]
Stall Torque ft-lb [Nm]	26,250	[35,600]

Operating Parameters		
Max Diff Pressure psi [kPa]	1800	[12,400]
Torque ft-lbs [Nm]	17,500	[23,700]
Max Flow Rate GPM [lpm]	750	[2,800]
Full Load RPM	139 at 750 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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Stator Specifications		
Overall Length in. [mm]	300.0	[7620]
Tube O.D. in. [mm]	7.00	[178]
Tube I.D. (Terminal) in. [mm]	5.75	[146]
Rubber Cutback Top in. [mm]	7.0	[177.8]
Rubber Cutback Btm in. [mm]	7.0	[177.8]
Weight lb [kg]	985	[445]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

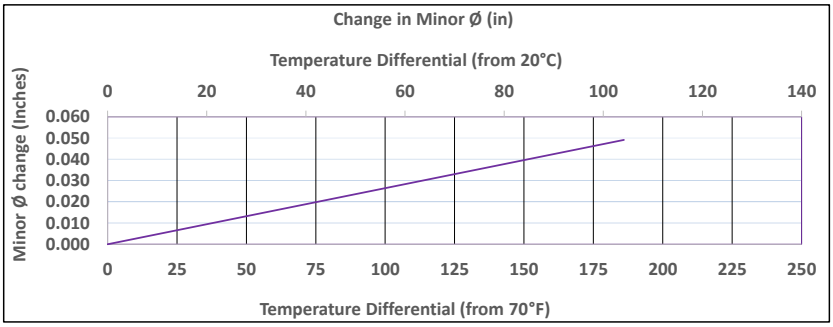
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.023	4.465
0.5T	0.013	4.475
STD	0.003	4.485
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000264 [0.000474]**

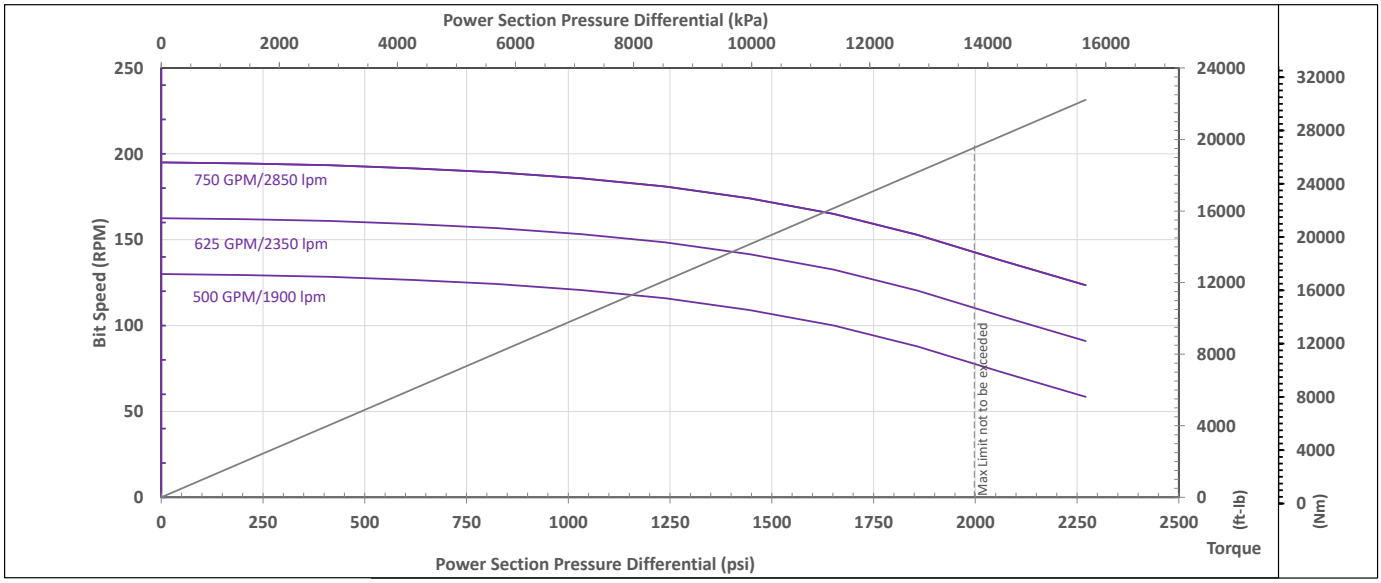
Rotor Specifications		
Overall Length in. [mm]	294.0	[7468]
Contour Length in. [mm]	288.0	[7315]
Major Diameter in. [mm]	5.024	[127.6]
Eccentricity in. [mm]	0.268	[6.8]
Head Diameter in. [mm]	5.000	[127]
Gunbored Weight lb [kg]	1067	[484]
Solid Weight lb [kg]	1326	[601]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	500 - 750	[1890 - 2840]
Speed Range RPM	130 - 195	
Torque Slope ft-lb/psi [Nm/kPa]	9.783	[1.924]
Rotation rev/Gal [rev/lit]	0.260	[0.069]
Stall Torque ft-lb [Nm]	29,300	[39,700]

Operating Parameters		
Max Diff Pressure psi [kPa]	2000	[13,800]
Torque ft-lbs [Nm]	19,550	[26,500]
Max Flow Rate GPM [lpm]	750	[2,800]
Full Load RPM	143 at 750 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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Houston, TX, 77032
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Stator Specifications		
Overall Length in. [mm]	203.2	[5161]
Tube O.D. in. [mm]	8.00	[203]
Tube I.D. (Terminal) in. [mm]	6.25	[159]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	1205	[545]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

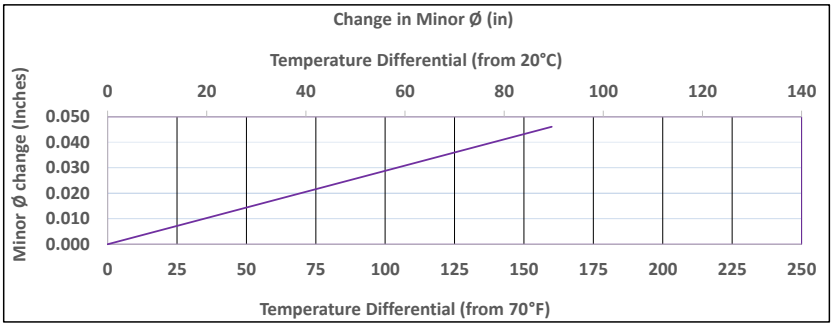
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	0.028	4.572
0.5T	0.018	4.582
STD	0.008	4.592
0.5L	-0.002	4.602
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000288 [0.000519]**

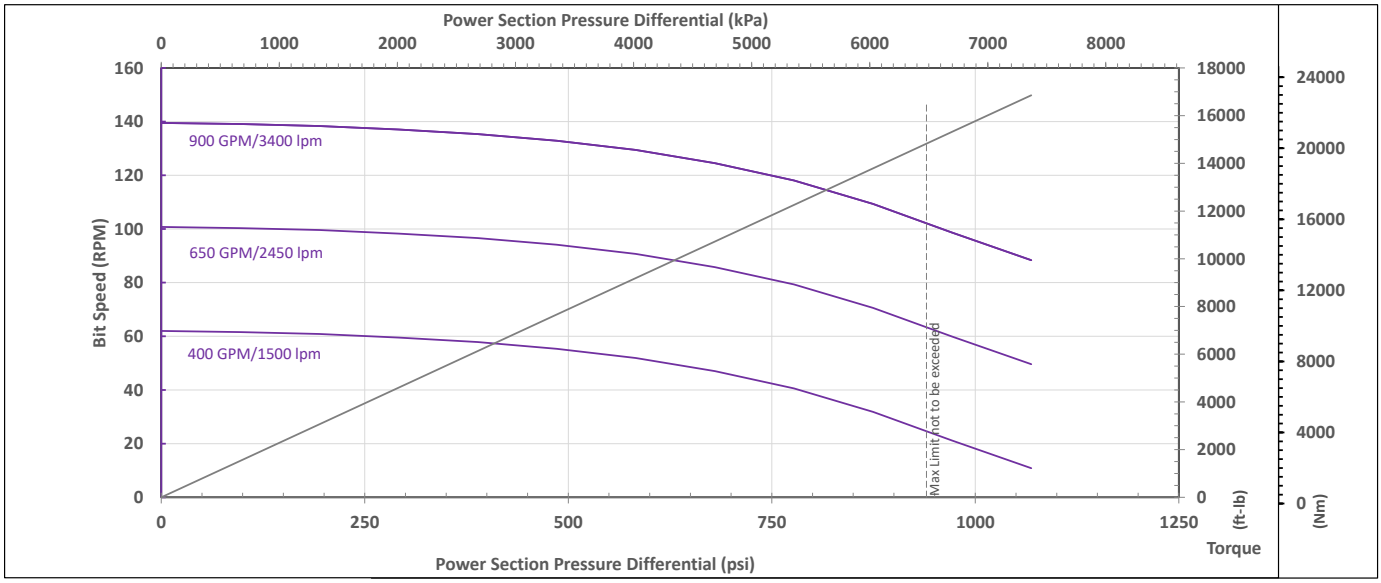
Rotor Specifications		
Overall Length in. [mm]	196.3	[4985]
Contour Length in. [mm]	188.3	[4782]
Major Diameter in. [mm]	5.186	[131.7]
Eccentricity in. [mm]	0.293	[7.4]
Head Diameter in. [mm]	4.750	[120.7]
Gunbored Weight lb [kg]	760	[345]
Solid Weight lb [kg]	933	[423]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	400 - 900	[1510 - 3410]
Speed Range RPM	60 - 140	
Torque Slope ft-lb/psi [Nm/kPa]	15.770	[3.101]
Rotation rev/Gal [rev/lit]	0.155	[0.041]
Stall Torque ft-lb [Nm]	22,250	[30,100]

Operating Parameters		
Max Diff Pressure psi [kPa]	950	[6,500]
Torque ft-lbs [Nm]	14,800	[20,100]
Max Flow Rate GPM [lpm]	900	[3,400]
Full Load RPM	102 at 900 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





Performance curves are for reference only. Actual power section performance may vary depending on operating conditions (e.g. chosen rotor/stator interference fit, possible rubber swelling by drilling fluid, rotor and stator wear, actual downhole temperature, actual stator temperature, physical and chemical properties of the drilling fluid, and other factors encountered downhole). The torque may exceed that specified for the connected components. Operating above the recommended limits may result in damage to the power section and connected components which the operator may be liable for. Data subject to change without notice. Visit www.spirasystems.com for most up to date information.

Model last revised: 2024-10-01

USA
16518 Aldine Westfield, Suite A
Houston, TX, 77032
Phone: (281) 253-4000
www.spirasystems.com

CANADA
22 East Lake Crescent N.E.
Airdrie, AB, T4A 2H3
Phone: (587) 775-7777
www.spirasystems.com

8.00 7/8 LOBES 5.9 STAGES

Stator Specifications		
Overall Length in. [mm]	300.0	[7620]
Tube O.D. in. [mm]	8.00	[203]
Tube I.D. (Terminal) in. [mm]	6.25	[159]
Rubber Cutback Top in. [mm]	8.0	[203.2]
Rubber Cutback Btm in. [mm]	8.0	[203.2]
Weight lb [kg]	1800	[815]
Tube Material	4140-4145	
To be threaded and ID Banded by customer		

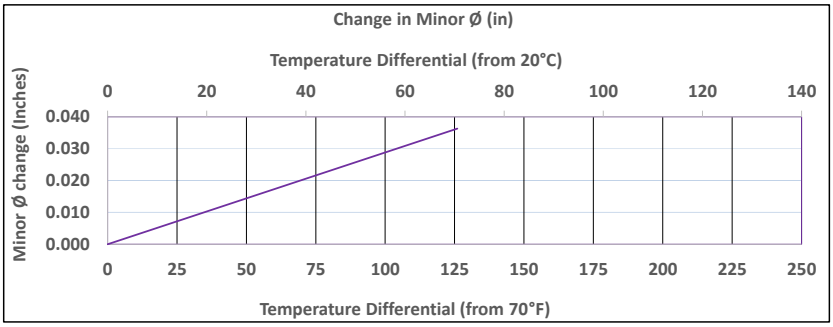
Minor Ø Fit Details at 70°F (20°C) (See Note 2)		
PARADIGM 89 HRD		
Size Band	Vector Fit See note 4	Vector (in) See note 4
1.0T	-	-
0.5T	0.018	4.582
STD	0.008	4.592
0.5L	-	-
1.0L	-	-
Minor Shrinkage (in/°F) [in/°C]		**0.000288 [0.000519]**

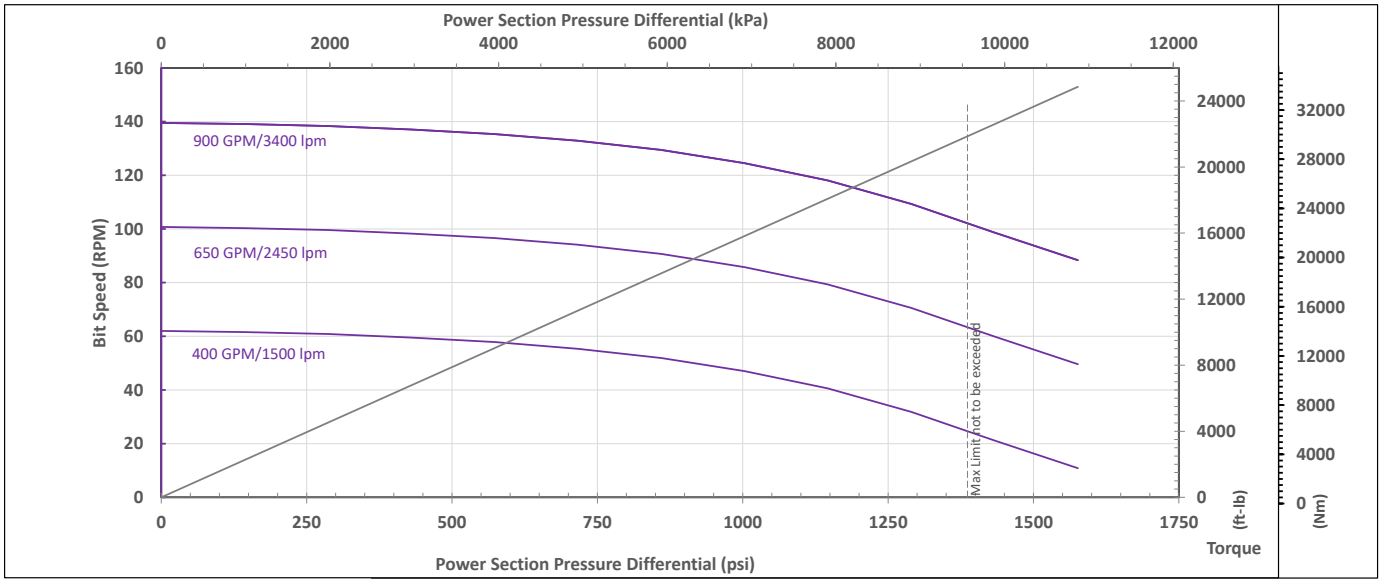
Rotor Specifications		
Overall Length in. [mm]	284.5	[7226]
Contour Length in. [mm]	276.5	[7023]
Major Diameter in. [mm]	5.186	[131.7]
Eccentricity in. [mm]	0.293	[7.4]
Head Diameter in. [mm]	5.250	[133.4]
Gunbored Weight lb [kg]	1096	[497]
Solid Weight lb [kg]	1346	[611]
Material (See note 3)	17-4 PH	
Coating Options	Chrome or Carbide	
To be threaded by customer		

Performance Specifications		
Flow Range GPM [lpm]	400 - 900	[1510 - 3410]
Speed Range RPM	60 - 140	
Torque Slope ft-lb/psi [Nm/kPa]	15.770	[3.101]
Rotation rev/Gal [rev/lit]	0.155	[0.041]
Stall Torque ft-lb [Nm]	32,800	[44,500]

Operating Parameters		
Max Diff Pressure psi [kPa]	1400	[9,600]
Torque ft-lbs [Nm]	21,850	[29,600]
Max Flow Rate GPM [lpm]	900	[3,400]
Full Load RPM	102 at 900 GPM	

Notes:
1. Reduce differential pressure 20% for temps above 250°F (125°C) and 40% for temps above 285°F (140°C)
2. Typical stator minor diameter tolerances are +/- 0.015
3. Material minimum yield to be discussed at time of order subject to availability
4. Negative fit indicates clearance





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