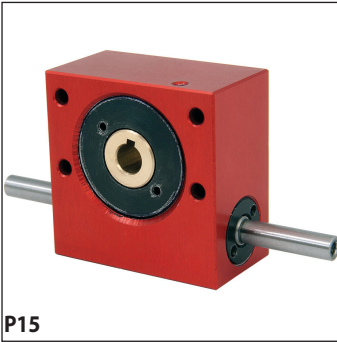
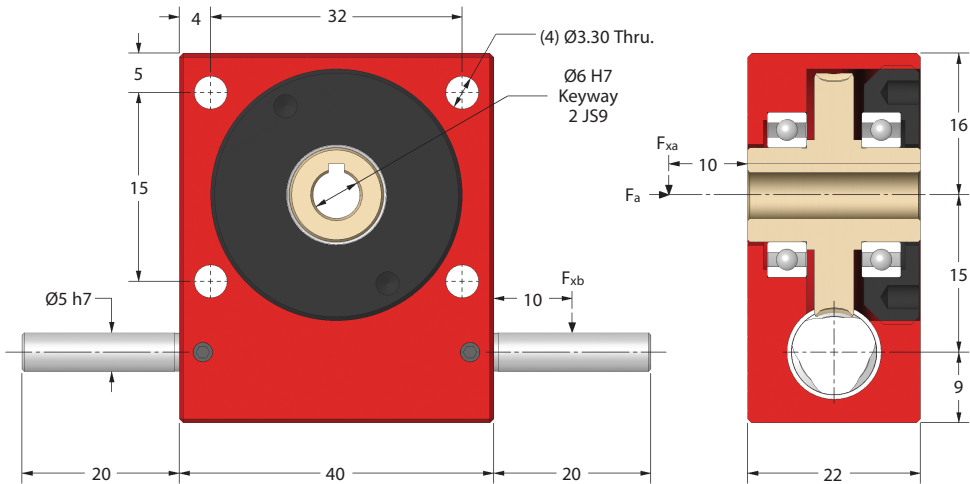


P15**e-cad**
Drawings
Available

GEARBOXES

Precision Worm Gear Reducers

Shaft Input 0.94 – 3.75 Nm **6.66:1 - 80:1****P15**

Standard ≤30°	Part Number Low Backlash ≤8°		Red. Backlash ≤4°	Ratio	Efficiency at 1000 Rpm	Reflected Inertia at Input (kg.m ²)	Self Locking Output
P15-6	P15-6A	P15-6AR		6.66:1	86%	1.79×10^{-7}	✗
P15-8	P15-8A	P15-8AR		8:1	85%	1.73×10^{-7}	✗
P15-10	P15-10A	P15-10AR		10:1	84%	1.68×10^{-7}	✗
P15-13	P15-13A	P15-13AR		13.33:1	78%	1.65×10^{-7}	✗
P15-20	P15-20A	P15-20AR		20:1	71%	1.62×10^{-7}	✗
P15-40	P15-40A	P15-40AR		40:1	60%	1.61×10^{-7}	✗
P15-80	P15-80A	P15-80AR		80:1	32%	1.60×10^{-7}	✗

Accessories

P20-X	Single Output Shafts
P20-DX	Double Output Shafts
KK2-20	Output Key

Weight: 0.15 kg. **Greased for Life:** Shell Gadus S5 V42P 2.5.**F_{xb} at 1000 Rpm:** 4 kg. **F_{xa} at 1000 Rpm:** 8 kg. **F_a at 1000 Rpm:** 3 kg.**Input Shaft Modifications:**Smaller Diameter, Mill Keyway/Flat, Shorten Shaft Length.
Circlip Groove, Pin Hole.

Testing in your application is necessary.

You will need to assess duty cycles and confirm suitability with your own calculations.

All figures listed are to be used for guidance only.

Output Torque Nm

Rpm Input	Reduction Ratio						
	6.66:1	8:1	10:1	13.33:1	20:1	40:1	80:1
3000	1.05	1.13	1.20	1.28	1.43	1.58	0.94
2000	1.28	1.28	1.35	1.35	1.58	1.80	1.07
1000	1.58	1.73	1.73	1.88	2.03	2.18	1.28
500	2.03	2.03	2.10	2.18	2.40	2.63	1.46
200	2.55	2.63	2.63	2.78	2.93	3.08	1.70
100	2.93	2.93	3.08	3.15	3.23	3.38	1.91
50	3.30	3.38	3.38	3.45	3.53	3.60	2.04
10	3.60	3.60	3.68	3.68	3.75	3.75	2.04

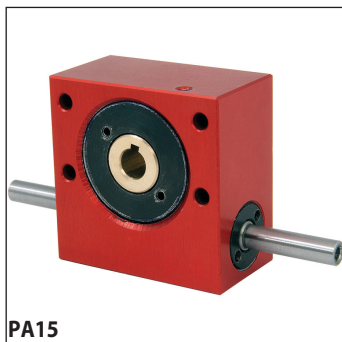
GEARBOXES

Precision Worm Gear Reducers

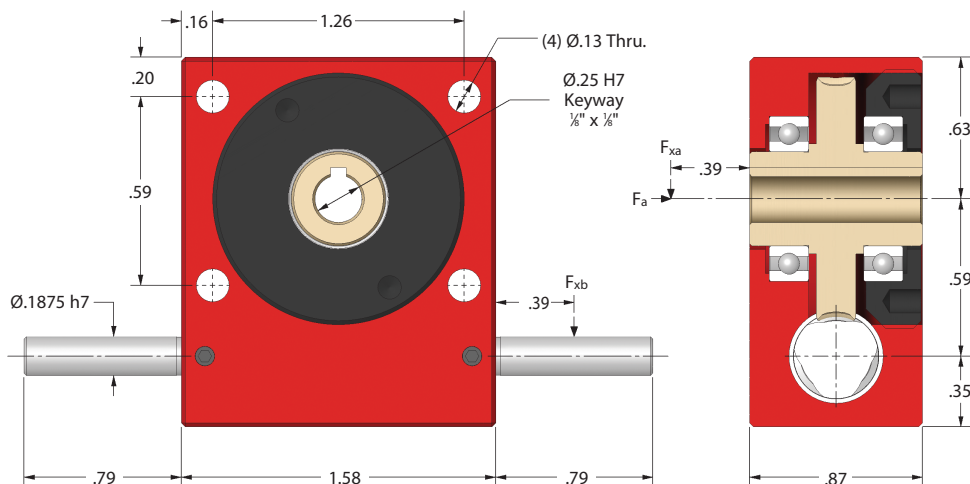
Shaft Input 8.3 – 33.2 lbf.in **6.66:1 - 80:1**

e-cad
Drawings
Available

PA15



PA15



Standard ≤30'	Part Number				Reflected Inertia at Input (lb.in ²)	Self Locking Output
	Low Backlash ≤8'	Red. Backlash ≤4'	Ratio	Efficiency at 1000 Rpm		
PA15-6	PA15-6A	PA15-6AR	6.66:1	86%	6.12 x 10 ⁻⁴	✗
PA15-8	PA15-8A	PA15-8AR	8:1	85%	5.91 x 10 ⁻⁴	✗
PA15-10	PA15-10A	PA15-10AR	10:1	84%	5.74 x 10 ⁻⁴	✗
PA15-13	PA15-13A	PA15-13AR	13.33:1	78%	5.64 x 10 ⁻⁴	✗
PA15-20	PA15-20A	PA15-20AR	20:1	71%	5.54 x 10 ⁻⁴	✗
PA15-40	PA15-40A	PA15-40AR	40:1	60%	5.50 x 10 ⁻⁴	✗
PA15-80	PA15-80A	PA15-80AR	80:1	32%	5.47 x 10 ⁻⁴	✗

Weight: 0.33 lb. **Greased for Life:** Shell Gadus S5 V42P 2.5.

F_{2a} at 1000 Rpm: 8.81 lb. **F_{2a} at 1000 Rpm:** 17.64 lb. **F₂ at 1000 Rpm:** 6.61 lb.

Input Shaft Modifications:

Smaller Diameter, Mill Keyway/Flat, Shorten Shaft Length.
Circlip Groove, Pin Hole.

Testing in your application is necessary.

You will need to assess duty cycles and confirm suitability with your own calculations.

All figures listed are to be used for guidance only.

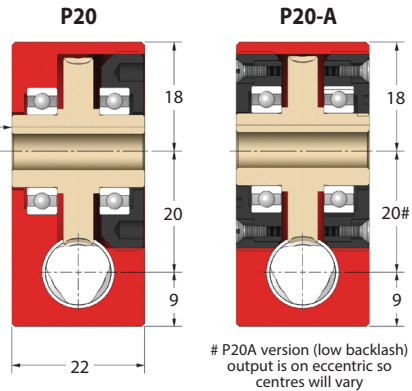
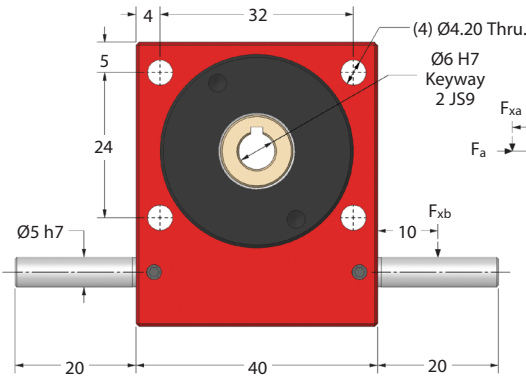
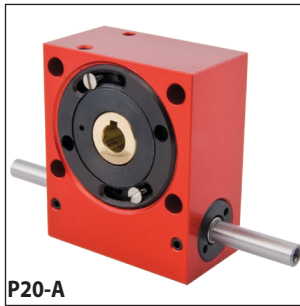
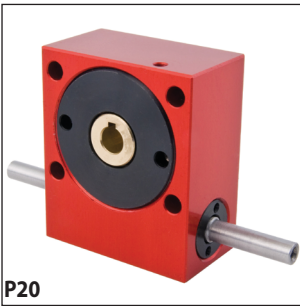
Output Torque lbf.in

Rpm	Reduction Ratio						
Input	6.66:1	8:1	10:1	13.33:1	20:1	40:1	80:1
3000	9.3	10.0	10.6	11.3	12.7	14.0	8.3
2000	11.3	11.3	11.9	11.9	14.0	15.9	9.5
1000	14.0	15.3	15.3	16.6	18.0	19.3	11.3
500	18.0	18.0	18.6	19.3	21.2	23.3	12.9
200	22.6	23.3	23.3	24.6	25.9	27.3	15.0
100	25.9	25.9	27.3	27.9	28.6	29.9	16.9
50	29.2	29.9	29.9	30.5	31.2	31.9	18.1
10	31.9	31.9	32.6	32.6	33.2	33.2	18.1

P20**e-cad**
Drawings
Available

GEARBOXES

Precision Worm Gear Reducers

Shaft Input 1.25 – 5 Nm **5:1 - 120:1**

Standard ≤30'	Part Number		Ratio	Efficiency at 1000 Rpm	Reflected Inertia at Input (kg.m ²)	Self Locking Output
	Low Backlash ≤8'	Red. Backlash ≤4'				
P20-10	P20-10A	P20-10AR	10:1	86%	2.03 x 10 ⁻⁷	✗
P20-12	P20-12A	P20-12AR	12:1	85%	1.93 x 10 ⁻⁷	✗
P20-15	P20-15A	P20-15AR	15:1	84%	1.85 x 10 ⁻⁷	✗
P20-20	P20-20A	P20-20AR	20:1	78%	1.78 x 10 ⁻⁷	✗
P20-30	P20-30A	P20-30AR	30:1	71%	1.74 x 10 ⁻⁷	✗
P20-60	P20-60A	P20-60AR	60:1	60%	1.71 x 10 ⁻⁷	✓
P20-120	P20-120A	P20-120AR	120:1	32%	1.50 x 10 ⁻⁷	✓
P20-SP	P20-SPA	P20-SPAR	5:1-120:1	Special Ratios : Replace SP with required ratio		
Accessories						
P20-X				Single Output Shafts		
P20-DX				Double Output Shafts		
KK2-20				Output Key		

Weight: 0.18 kg. **Greased for Life:** Shell Gadus S5 V42P 2.5.**F_{xb}** at 1000 Rpm: 6 kg. **F_{xa}** at 1000 Rpm: 12 kg. **F_a** at 1000 Rpm: 5 kg.**Input Shaft Modifications:**Smaller Diameter, Mill Keyway/Flat, Shorten Shaft Length.
Circlip Groove, Pin Hole.

Testing in your application is necessary.

You will need to assess duty cycles and confirm suitability with your own calculations.

All figures listed are to be used for guidance only.

Output Torque Nm

Rpm Input	Reduction Ratio						
	10:1	12:1	15:1	20:1	30:1	60:1	120:1
3000	1.40	1.50	1.60	1.70	1.90	2.10	1.25
2000	1.70	1.70	1.80	1.80	2.10	2.40	1.42
1000	2.10	2.30	2.30	2.50	2.70	2.90	1.70
500	2.70	2.70	2.80	2.90	3.20	3.50	1.94
200	3.40	3.50	3.50	3.70	3.90	4.10	2.27
100	3.90	3.90	4.10	4.20	4.30	4.50	2.55
50	4.40	4.50	4.50	4.60	4.70	4.80	2.72
10	4.80	4.80	4.90	4.90	5.00	5.00	2.72

GEARBOXES

Precision Worm Gear Reducers

Shaft Input 11.1 – 44.3 lbf.in **5:1 - 120:1**

e-cad
Drawings
Available

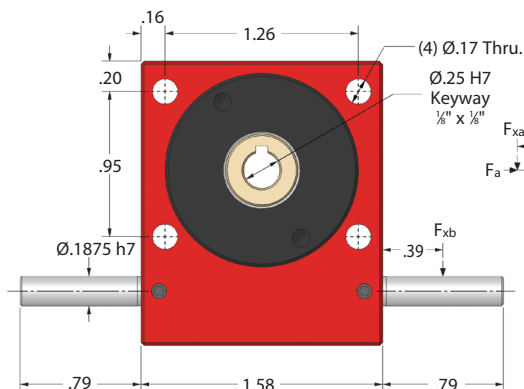
PA20



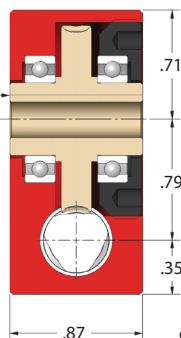
PA20



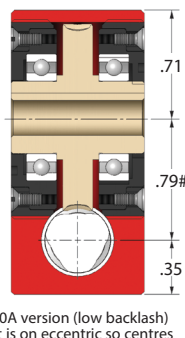
PA20-A



PA20



PA20-A



PA20A version (low backlash) output is on eccentric so centres will vary

Standard ≤30'	Part Number Low Backlash ≤8'	Red. Backlash ≤4'	Ratio	Efficiency at 1000 Rpm	Reflected Inertia at Input (lb.in ²)	Self Locking Output
PA20-10	PA20-10A	PA20-10AR	10:1	86%	6.94 x 10 ⁻⁴	✗
PA20-12	PA20-12A	PA20-12AR	12:1	85%	6.60 x 10 ⁻⁴	✗
PA20-15	PA20-15A	PA20-15AR	15:1	84%	6.32 x 10 ⁻⁴	✗
PA20-20	PA20-20A	PA20-20AR	20:1	78%	6.08 x 10 ⁻⁴	✗
PA20-30	PA20-30A	PA20-30AR	30:1	71%	5.95 x 10 ⁻⁴	✗
PA20-60	PA20-60A	PA20-60AR	60:1	60%	5.84 x 10 ⁻⁴	✓
PA20-120	PA20-120A	PA20-120AR	120:1	32%	5.13 x 10 ⁻⁴	✓
PA20-SP	PA20-SPA	PA20-SPAR	5:1-120:1	Special Ratios : Replace SP with required ratio		

Weight: 0.40 lb. Greased for Life: Shell Gadus S5 V42P 2.5.

F_a at 1000 Rpm: 13.23 lb. F_{xa} at 1000 Rpm: 26.46 lb. F_a at 1000 Rpm: 11.02 lb.

Input Shaft Modifications:

Smaller Diameter, Mill Keyway/Flat, Shorten Shaft Length.
Circlip Groove, Pin Hole.

Testing in your application is necessary.

You will need to assess duty cycles and confirm suitability with your own calculations.

All figures listed are to be used for guidance only.

Output Torque lbf.in

Rpm Input	Reduction Ratio						
	10:1	12:1	15:1	20:1	30:1	60:1	120:1
3000	12.4	13.3	14.2	15.0	16.8	18.6	11.1
2000	15.0	15.0	15.9	15.9	18.6	21.2	12.6
1000	18.6	20.4	20.4	22.1	23.9	25.7	15.0
500	23.9	23.9	24.8	25.7	28.3	31.0	17.2
200	30.1	31.0	31.0	32.7	34.5	36.3	20.1
100	34.5	34.5	36.3	37.2	38.1	39.8	22.6
50	38.9	39.8	39.8	40.7	41.6	42.5	24.1
10	42.5	42.5	43.4	43.4	44.3	44.3	24.1