



Martin Gears

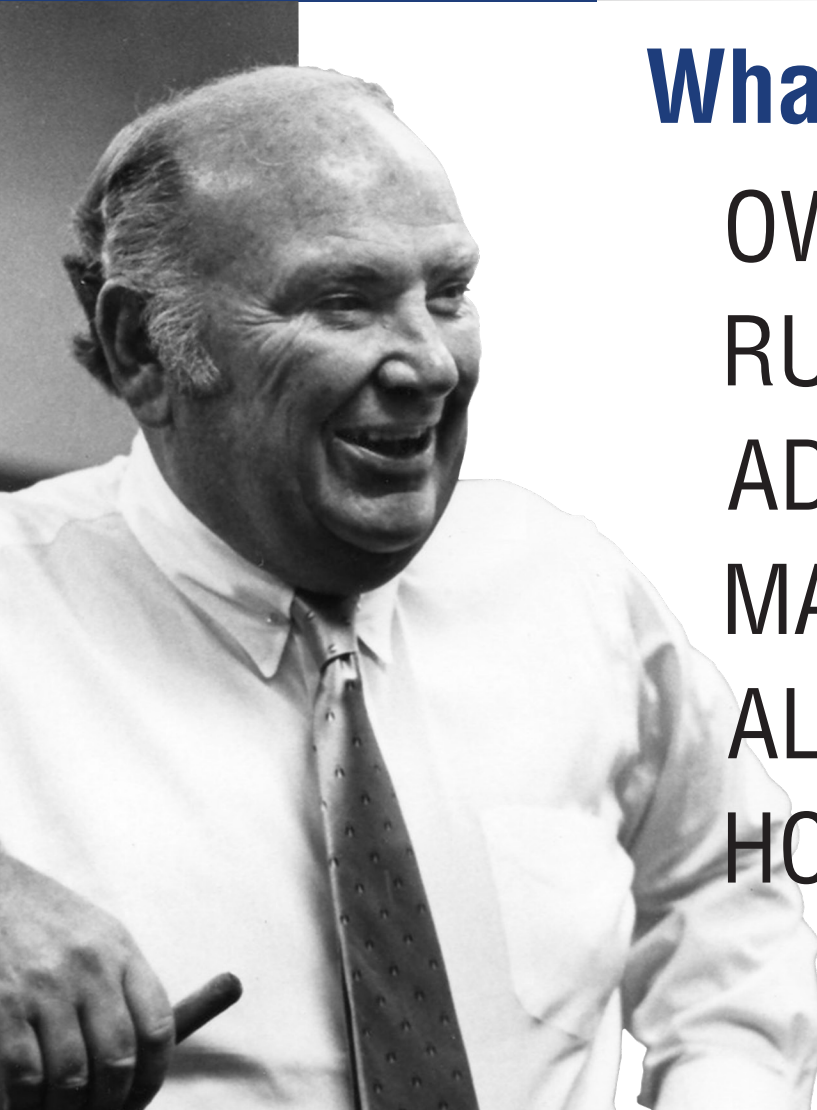


14½° AND 20°

SPUR, BEVEL, MITER, RACK, WORM AND WORM GEAR

SPECIALITY AND MADE-TO-ORDER





What would Joe do?

OWN your own territory and
take care of our customers

RUN your facility and take
care of our people

ADD something to
the ballgame

MAKE SURE you have your
priorities right

ALWAYS back to the basics – quality,
service, low-cost producer

HOW to get big and
stay small

A handwritten signature in blue ink that reads "Joe Martin". The signature is stylized and cursive.

Established in 1951 in Arlington, Texas, Martin has evolved into a global powerhouse with 30+ strategically located sites. Our unwavering commitment to excellence in power transmission and material handling positions us as a trusted partner globally. At Martin, we offer more than products; we provide precision, personalized service, combining global capability with local care. Experience the Martin difference, where our dedication to quality sets us apart.

Success in Business, Martin's Philosophy:

Success at Martin requires a strategic mindset — knowing customers, taking ownership, building trust, and cultivating an owner's mentality. Effective leadership involves personal responsibility, positive work culture, visibility, and effective communication. Unlocking success demands creativity, innovation, and resisting the status quo. Aligning priorities with a greater purpose ensures contributions lead to organizational success. Martin emphasizes basics — quality, service, and low-cost production — for streamlined and maximized efforts.

"Get Big, Stay Small" Strategy:

Martin advises strategic business expansion, discovering scalable avenues while preserving core qualities. Maintaining agility and adaptability in the dynamic market landscape is crucial. In a world full of choices, Martin's commitment to prioritizing personalized service and connections with customers sets us apart from the competition.

AVAILABLE IN STOCK

**SPUR GEARS**

- 14 ½° and 20° pressure angle
- 3-24 DP (Diametral Pitch)
- Solid, web, spoke, and with lightening holes
- A, B and C style
- Cast
- Steel
- Plain bore
- Finished bore

**BEVEL AND MITER GEARS**

- 20° pressure angle
- 3 to 24 DP
- 1:1 to 6:1 ratios
- B style
- Coniflex tooth form
- Steel
- Cast iron
- Plain bore
- Hardened with keyway options

**WORM AND WORM GEARS**

- 14 ½° pressure angle
- 3 to 16 DP
- Single, double, quadruple threads
- B style
- Solid, web and spoke
- Cast
- Steel
- Bronze
- Ground and polished threads
- Plain bore
- Finished bore

**GEAR RACK**

- 14 ½° and 20° pressure angle
- 3 to 24 DP
- 2, 4, and 6 feet lengths
- Low carbon cold drawn steel

GEAR DRIVE SELECTOR

Step 1: Select Gearing Type



Next Step

ONLINE GEAR DRIVE SELECTOR TOOL

The Martin Gear Drive Selector online tool simplifies the process of finding the right product for you. Simply input your drive specifications, and we'll guide you to the perfect selection. Visit martinsprocket.com or scan the QR code to explore this and other drive selector tools available.

**RACK AND PINIONS**

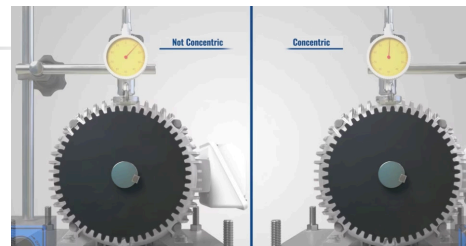
Rack and pinion gears change rotary motion to linear motion or linear motion to rotary motion. The gear rack consists of a straight bar with either straight or helical teeth, designed to mesh with a pinion gear, which can be either a standard spur or helical gear.

Scan QR code to watch video:
Rack Teeth Cutting

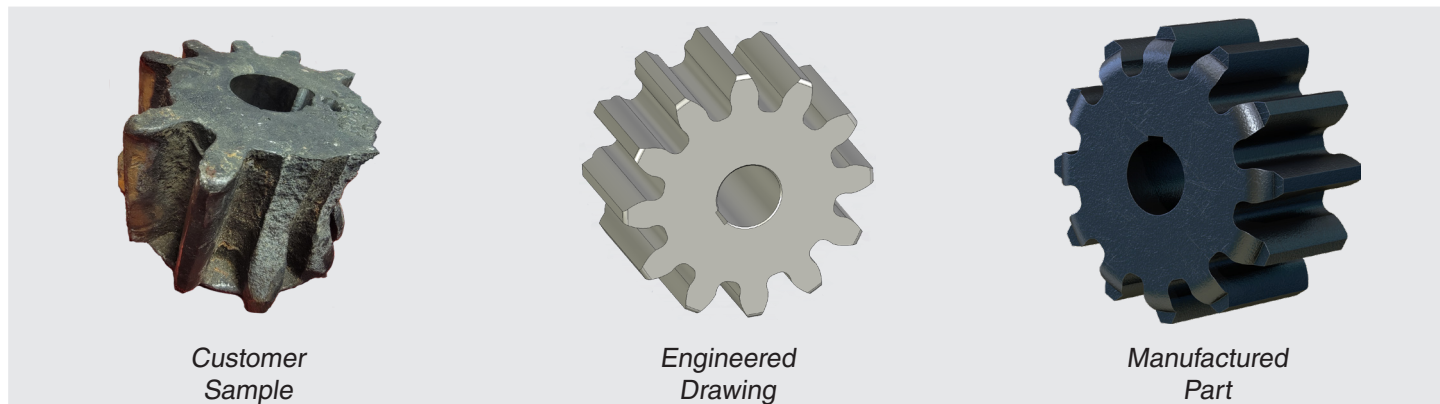
**TOTAL INDICATOR RUNOUT (TIR)**

Total Indicator Runout (TIR) might sound like a technical term, but essentially, TIR refers to the radial deviation of a gear or sprocket's rotational axis from its ideal centerline.

Scan QR code to watch video:
Understanding Total Indicator Runout (TIR)



REVERSE ENGINEERING



Reverse engineering a broken gear provides valuable insights into failure modes and weaknesses, facilitating design and manufacturing improvements for stronger, more efficient gears. This process enables material optimization, manufacturing process refinement, design optimization, cost savings, and quality assurance, while also fostering innovation and customization. Ultimately, it enhances gear performance, design, and cost-effectiveness, benefiting manufacturers and end-users alike.

MADE-TO-ORDER



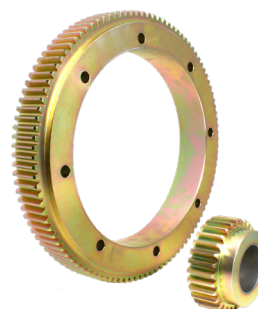
- Helical
- Split
- Plastic
- Stainless
- Plated finishes
- Modular and circular pitch
- Various pressure angles
- Spline
- Internal ring
- 1 DP cutting capability
- 90" OD (Outside Diameter) max with 8" Face
- Left hand worm and worm gears
- Further designs upon request

MADE-TO-ORDER CAPABILITIES

	PITCH RANGE	OUTSIDE DIAMETER	MAXIMUM FACE WIDTH
SPUR GEARS	1 – 32 DP	0.58" – 100"	16"
BEVEL GEARS	3 – 32 DP	0.8" – 23"	3.5"
MITER GEARS	3 – 32 DP	0.8" – 23"	3.5"
WORMS	2 – 32 DP	0.36" – 6"	5"
WORM GEARS	3 – 32 DP	0.58" – 30"	8"
HELICAL GEARS	1 – 32 DP	0.58" – 100"	12"

	PITCH RANGE	MAXIMUM LENGTH	MAXIMUM FACE WIDTH
RACK	1 – 24 DP	144"	12"
HELICAL RACK	1 – 8 DP	144"	12"

MATERIALS AND FINISHES



MATERIALS

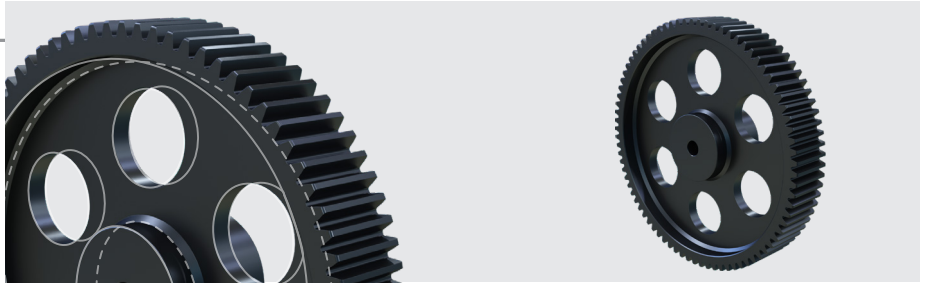
- Cast Iron
- Plastic
- Aluminum bronze
- Stainless

FINISHES

- Paint
- Black oxide
- Nickel
- Zinc
- Chrome
- And more

FABRICATED CONSTRUCTION

Fabricated construction utilizes weight reduction measures during the manufacturing process resulting in less load on the shaft and greater ease of installation while maintaining peak performance.



RE-RIMMING

Re-rimming services can be performed on existing worn-out gears to reduce downtime. Similar to re-treading a tire, re-rimming allows you to repurpose the existing body of the gear to reduce material costs.



SEGMENTAL SPLIT GEAR

Segmented split gear designs offer the ability to replace a gear without moving other equipment and/or components resulting in a fast and safe installation.

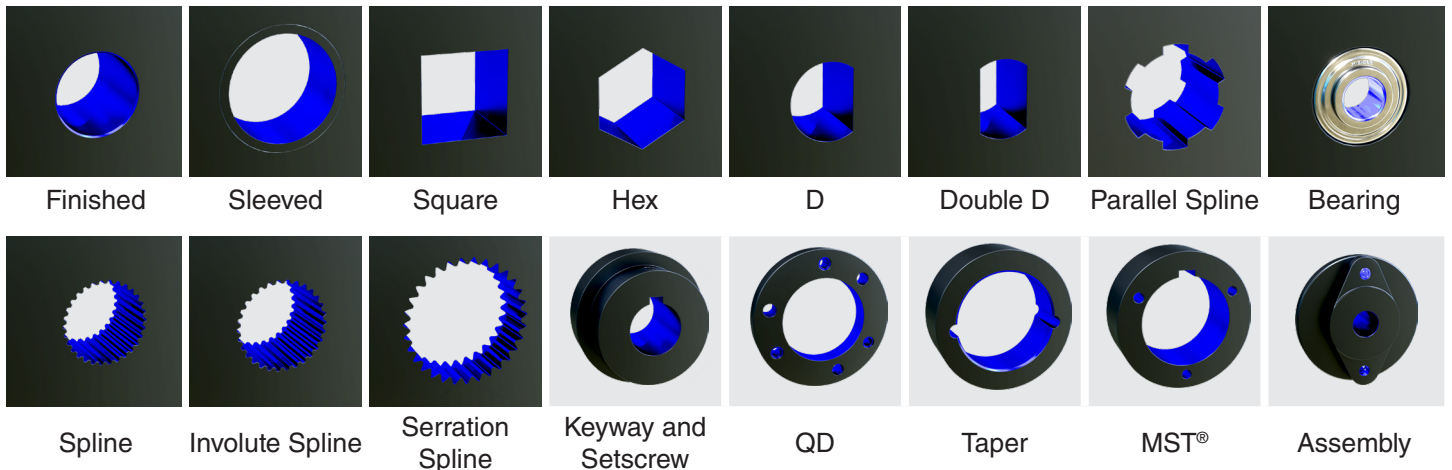


TIMING MARKS

Timing marks are used when your application requires precise timing, Martin can manufacture gears that are match marked and etched with a timing line.



AVAILABLE CUSTOM BORE OPTIONS



POWERING INDUSTRIES SINCE 1951

Unlock the pinnacle of industrial excellence with Martin, your trusted partner in custom gear engineering. For over seven decades, we've been at the forefront of innovation, crafting bespoke solutions that stand the test of time.

Elevate your industrial experience with Martin – where precision meets performance, and innovation meets reliability. Unleash the power of custom gears designed to propel your industry forward. Choose Martin, choose excellence.



UNMATCHED INVENTORY

With the largest power transmission stock in North America, find the perfect fit for your needs, always exceeding expectations.

TAILORED TO PERFECTION

Crafting made-to-order gears for unique industrial needs. Diverse materials, shaft options, and assemblies bring your vision to life.

QUALITY ASSURED

Backed by a solid one-year warranty, Martin ensures top-tier reliability and durability in every product.

RAPID RESPONSE, SWIFT SOLUTIONS

Quick alterations and manufacturing across locations guarantee the industry's fastest lead times for made-to-order products. Your deadlines, our priority.

A PERSONAL TOUCH TO EVERY ORDER

Beyond products, Martin is your dedicated partner in success. Experience precision, performance, and reliability. Choose Martin, choose excellence.

NOMENCLATURE

Spur Gears



S	Steel
TS	Steel, 20°
C	Cast Iron
TC	Cast Iron, 20°
H	Hardened Teeth
NM	Non-Metallic

Examples:

S620	Steel 6DP 20T 14½°PA
TS621	Steel 6DP 21T 20°PA
C675	Cast Iron 6DP 75T 14½°PA
S620H	Steel 6DP 20T Hardened 14½°PA
NM620	Non-Metallic 6DP 20T 14½°PA
S612BS 1	Steel 6DP 12T 1" Bore 14½°PA
TS816BS 7/8	Steel 8DP 16T .875 Bore 20°PA

Bevel Gears

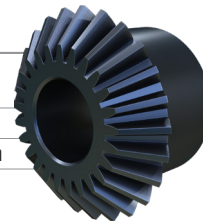


B	Bevel Gear, Cast Iron
B	Pinion, Steel
BS	Bevel Gear, Steel
BS	Pinion, Steel

Examples:

B1060-3	Cast Iron 10DP 60T 3:1 Ratio
B1020-3	Steel 10DP 20T 3:1 Ratio
BS1040-2	Steel 10DP 40T 2:1 Ratio
BS1020-2	Steel 10DP 20T 2:1 Ratio

Miter Gears



M	Miter Gear, Steel
A/B	Larger Bore (Suffix)
HM	Miter, Hardened Teeth
K	KW & SS

Notes:

ALWAYS 1: 1 RATIO.

Same number of teeth on each mating Gear.

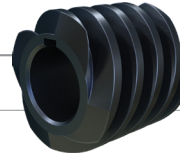
Examples:

M824	Steel 8DP 24T
M824A	Steel 8DP 24T Larger Bore
HM1020	Steel Hardened Teeth 10DP 20T
HMK1020	Steel Hardened 10DP 20T with KW & SS

TYPICAL SPUR NOMENCLATURE

Pressure Angle 20°	T	S	8	24	BS	1	Bore Size
Material							
S Steel							
C Cast Iron							
NM Non-Metallic							
	Bored with Keyway & Set Screws						
							# of Teeth
							Diametral Pitch (DP)

Worm



W	Steel
WH	Steel With Hub Projection
WG	Steel Hardened Ground Threads
WHG	Steel Hardened Ground Threads with Hub Projection
D / Q	(Suffix) Double or Quadruple Thread

Examples:

W6	Steel 6DP Right Hand
WH6	Steel w/Hub Projection 6DP Right Hand
WG6	Steel Case Hardened Ground Threads 6DP Right Hand
WHG6	Steel w/Hub Projection Hardened Ground Threads 6DP Right Hand
W6D	Steel 6DP Double Thread Right Hand

Worm Gear



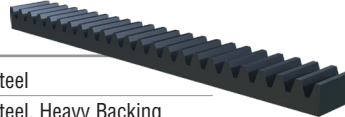
W	Worm, Cast Iron
WB	Worm, Bronze
D / Q	(Suffix) Double or Quadruple Thread

Worms and Worm Gears come standard as right hand. If left hand is needed, it must be specified.

Examples:

W660	Cast Iron 6DP 60T Right Hand
WB1020	Bronze 10DP 20T Right Hand
W640D	Cast Iron 6DP 40T Double Thread Right Hand

Racks

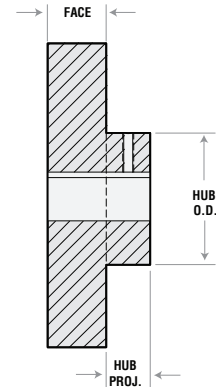


R	Steel
RA	Steel, Heavy Backing
TR	Steel, 20°, Heavy Backing
R20	Steel, 20°, Wide Face

Examples:

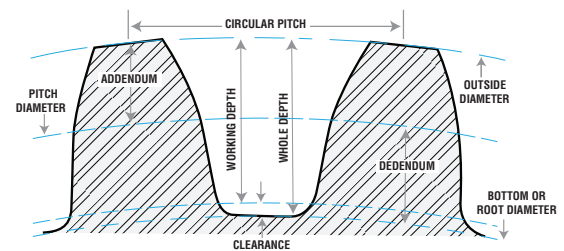
R6X2	14½° STD Backing 6DPX2' Long
RA6X4	14½° Heavy Backing 6DPX4' Long
TR6X6	20° STD Width 6DPX6' Long
R206X6	20° Wide Face 6DPX6' Long

INFORMATION FOR QUOTE



1. Pitch (3DP, 4DP, 2CP, etc.)
2. Number of teeth
3. Pressure angle (14½°, 20°, etc.)
4. Face width
5. Material (1144, 1040, 4140, etc.)
6. Hardened teeth?
7. Style of Gear (A, B, C)
8. Hub thru diameter
9. Length through bore or hub projection
10. Bore
11. Keyway size
12. Number and size of set screw(s)
13. Special features

COMMON FORMULAS



$$OD = \frac{N + 2}{DP}$$

$$DP = \frac{N}{PD}$$

$$CP = \frac{3.1416}{DP}$$

$$CD = \frac{PD(Dr) + PD(Dn)}{2}$$

$$\text{Module} = \frac{25.4}{DP}$$

$$\text{Ratio} = \frac{N \text{ Large}}{N \text{ Small}}$$

$$\text{Worm Ratio} = \frac{N \text{ in Worm Gear}}{\# \text{ Leads}}$$

$$DP = \frac{46 + 2}{6} \quad DP = 8$$

CP	Circular Pitch
N	Number of Teeth
DP	Diametral Pitch
PD	Pitch Diameter
OD	Outside Diameter
CD	Center Distance
Dr	Driver
Dn	Driven

SIZING EXAMPLE:
Gear with 46 teeth
has an OD of 6"



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