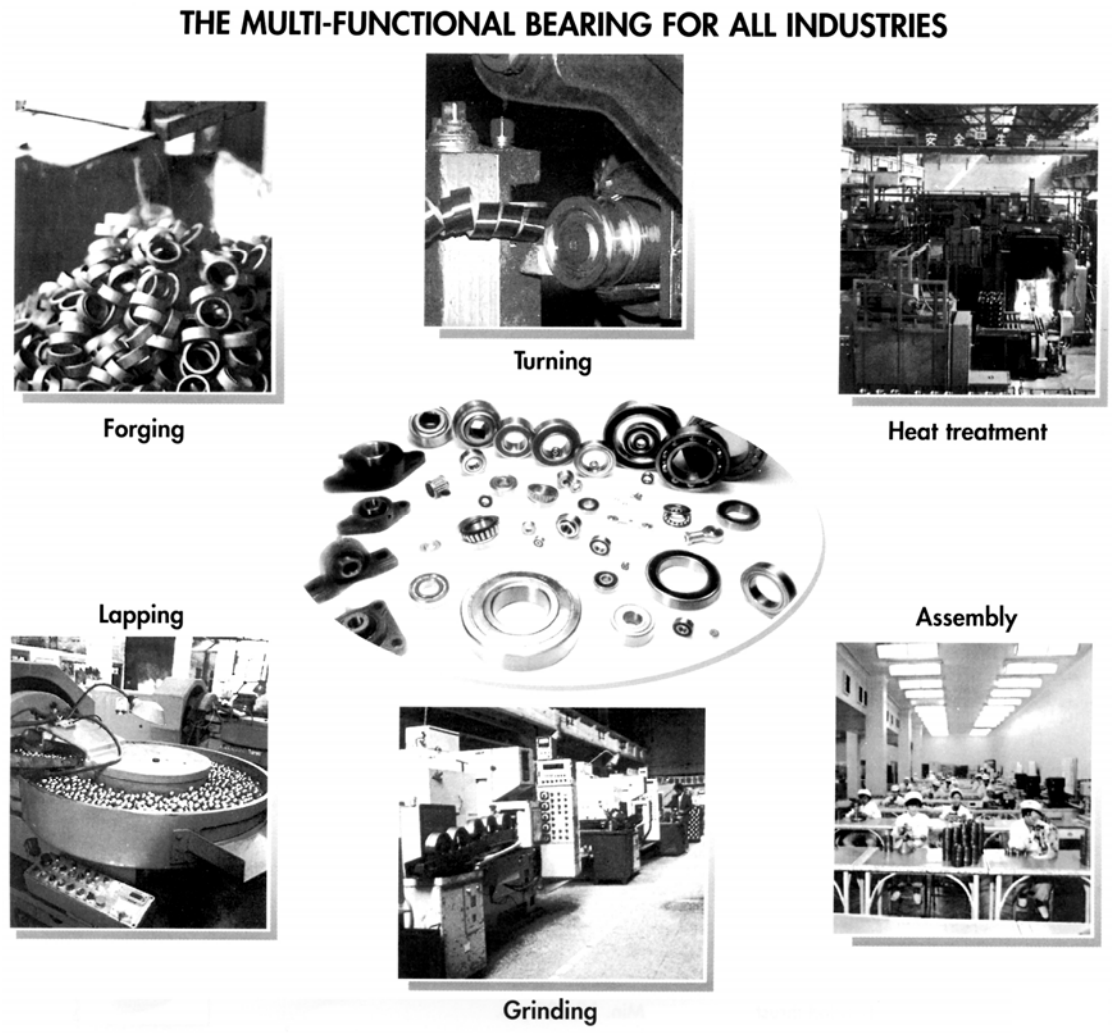
Bearing Quality

All bearings meet or exceed AFBMA standards and ISO standards. The latest testing equipment is in use at each of our sources.

FIT Bearings continually inspects and surveys each plant's facilities, production equipment, and instrumentation to assure that they have the capabilities to meet the highest quality standards. Their commitment to quality is also reviewed.

Lubrication can be specified to meet your requirements, whether using oil, U.S. grease, or any other grease. Steel used is bearing quality vacuum degassed 52100 or 440c stainless. Balls are grade 5 or better.

Bearing parts are cleaned with modern equipment, then assembled, lubricated and packaged in a controlled environment.



Most rolling bearings are subject to high cyclic stresses during operation, and fail due to rolling contact fatigue. Rolling bearing materials should possess the following properties:

1) High uniform hardness and wear-resistance
2) High elastic limit and rolling contact fatigue strength
3) Sufficient toughness
4) Good dimensional stability

The materials used for rings and rolling elements of all FIT Bearings are specially made and processed to ensure the above requirements are satisfied. The rings and rolling elements of bearings for general applications working at normal temperatures are made of chromium bearing steel GCr 15, and that of large size bearings; chromium bearing steel GCr 15 SiMn is adopted. For bearings operating within the temperature range of 120-180C, bearing steel GCr 15 and GCr 15 SiMn are also used with additional heat-treatment. For operating temperatures above 180C, bearings are made of heat resistance bearing steels CrMo4V and W 18Cr4V. Alloy case-hardening steel 20Cr2Ni4V or 20CrNiMoA is used for bearings under heavy shock loads. For bearings working in corrosive environment, corrosion-resistant steels 9Cr18 and 9Cr18Mo are used. The above mentioned range of bearing steels will practically satisfy all the requirements of rolling bearings for general purposes.

CHEMICAL COMPOSITION

Designation	C	Si	Mn	P	S	Cr	Ni	Mo	V	Other
	%									
GCr15	0.95-1.05	0.15-0.35	0.25-0.45	≤0.025	≤0.025	1.40-1.65	≤0.030			Cu≤0.25
Gcr15SiMn	0.95-1.05	0.45-0.75	0.95-1.25	≤0.025	≤0.025	1.40-1.65	≤0.030			Cu≤0.25
Cr4Mo4V	0.75-0.85	≤0.35	≤0.35	≤0.027	≤0.020	3.75-4.25		4.0-4.5	0.90-1.10	
W18Cr4V	0.70-0.80	≤0.40	≤0.40	≤0.030	≤0.030	3.80-4.40		≤0.030	1.00-1.40	w 17.5-19.0
20CrNi4A	0.17-0.22	0.17-0.37	0.30-0.60	≤0.027	≤0.025	1.25-1.65	3.30-3.70			Cu≤0.25
20CrNiMoA	0.17-0.23	0.15-0.40	0.60-.090	≤0.030	≤0.030	0.40-0.70	0.40-.070	0.15-0.30		
9Cr18	0.90-1.00	≤0.80	≤0.80	≤0.035	≤0.030	17.0-19.0				
9Cr18Mo	1.00-1.10	≤0.80	≤0.50	≤0.027	≤0.020	16.0-18.0		≤0.75		

CHEMICAL COMPOSITION STANDARD

Designation	ISO	USA	Germany	Japan	Sweden
	%				
GCr15	683/XVII 1	E52100 (AISI)	100Cr6 (DN)	SUJ2 (JIS)	SKF3
Gcr15SiMn	683/XVII 2	ASTM Grade 1	100CrMn6 (DN)		
Cr4Mo4V	683/XVII 30	M50 (AISI)			
W18Cr4V	683/XVII 32	T1 (AISI)		SKH2 (JIS)	
20CrNi4A					
20CrNiMoA	683/XVII 12	8620 (SAE)		SNCM21	SFK152
9Cr18					
9Cr18Mo	683/XVII 21	440C (AISI)		SUS 440C (JIS)	