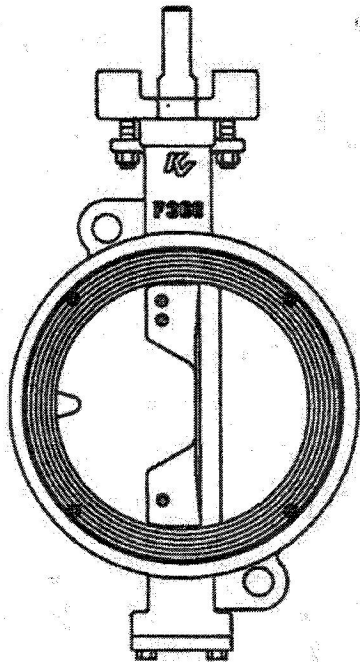


KEYSTONE
VALVE USA, INC.

MIL-V-24624(SH) HIGH PERFORMANCE BUTTERFLY VALVES



BODY-STYLE A & B

TYPE I & II	316 STAINLESS STEEL	ASTM A351 CF8M
TYPE III & IV	NI AL BRZ	MIL-B-24480 CDA958

DISC

TYPE I & II	316 STAINLESS STEEL/ENP	ASTM A351 CF8M/ENP
TYPE III & IV	MONEL	ASTM B164 M35, A,B, OR E

STEM/TAPER PINS

TYPE I & II	17-4ph STAINLESS STEEL	ASTM A564 H1075
TYPE III & IV	K-MONEL 500	ASTM A164 QQN-288

SEAT

TYPE I & II	316 STAINLESS STEEL	W/RTFE
TYPE III & IV	MONEL 400	CR. PLATED

BUSHING

TYPE I & II	RTFE/FIBERGLASS EPOXY 316 STAINLESS STEEL NITRIDED
TYPE III & IV	RTFE/FIBERGLASS EPOXY BRONZE

PACKING

TYPE I & II	GRAPHITE	PALMETTO 1550
TYPE III & IV	GRAPHITE	PALMETTO 1550

KEYSTONE VALVE USA, INC.

9/15/92

MIL-V-24624(SH) HIGH PERFORMANCE BUTTERFLY VALVES

TYPES I & II STYLE A (WAFER)

FIG#	TRIM#	SIZE	PRESSURE	BODY	DISC	STEM/TAPER PINS	SEAT
360	143	2" - 14"	275PSI	316SS	ENP/316SS	17-4PH SS	RTFE/316SS

TYPES III & IV STYLE A (WAFER)

FIG#	TRIM#	SIZE	PRESSURE	BODY	DISC	STEM/TAPER PINS	SEAT
360	144	2" - 14"	275PSI	NAB	ENP/MONEL	K-500 MONEL	RTFE/MONEL

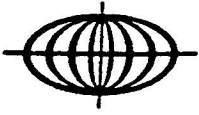
TYPES I & II STYLE B (LUGGED)

FIG#	TRIM#	SIZE	PRESSURE	BODY	DISC	STEM/TAPER PINS	SEAT
362	143	2" - 14"	275PSI	316SS	ENP/316SS	17-4PH SS	RTFE/316SS

TYPES III & IV STYLE B (LUGGED)

FIG#	TRIM#	SIZE	PRESSURE	BODY	DISC	STEM/TAPER PINS	SEAT
362	144	2" - 14"	275PSI	NAB	ENP/MONEL	K-500 MONEL	RTFE/MONEL

MILVCA:WEL



KEYSTONE

V A L V E

MIL-V-24624(SH) HIGH PERFORMANCE BUTTERFLY VALVES

TYPES I & II STYLE A (WAFER)

FIG#	TRIM#	SIZE	PRESSURE	BODY	DISC	STEM/TAPER PINS	SEAT
360	143	2-1/2" - 14"	275PSI	316SS	ENP/316SS	17-4PH SS	RTFE/316SS

TYPES III & IV STYLE A (WAFER)

FIG#	TRIM#	SIZE	PRESSURE	BODY	DISC	STEM/TAPER PINS	SEAT
360	144	2-1/2" - 14"	275PSI	NAB	ENP/MONEL	K-500 MONEL	RTFE/MONEL

TYPES I & II STYLE B (LUGGED)

FIG#	TRIM#	SIZE	PRESSURE	BODY	DISC	STEM/TAPER PINS	SEAT
362	143	2-1/2" - 14"	275PSI	316SS	ENP/316SS	17-4PH SS	RTFE/316SS

TYPES III & IV STYLE B (LUGGED)

FIG#	TRIM#	SIZE	PRESSURE	BODY	DISC	STEM/TAPER PINS	SEAT
362	144	2-1/2" - 14"	275PSI	NAB	ENP/MONEL	K-500 MONEL	RTFE/MONEL

ALL VALVES LISTED ABOVE MEET THE REQUIREMENTS OF USCG CATEGORY "P"

COMMERCIAL MARINE HIGH PERFORMANCE BUTTERFLY VALVES

FIG#	TRIM#	SIZE	PRESSURE	BODY	DISC	STEM/TAPER PINS	SEAT
360	341	2"	275PSI	NAB	AB	K-500 MONEL	RTFE
360	340	3" - 12"	275PSI	NAB	AB	K-500 MONEL	RTFE



FIG.360 MIL-V-24624 KLOK (STYLE A) WAFER BODY

PART NUMBER				
TRIM	PART	SIZE	FIG	E. VAR
XXX	703	YYY	360	ZZZ

MATERIALS		
TRIM (XXX)	143	144
BODY	316SS	NAB
DISC	316SS/ENP	MONEL/ENP
STEM	17-4PH SS	MONEL 500
SEAT	SS/CR-RTFE	MONEL/CR-RTFE
BUSHING	SS/NIT-EPOXY	RTFE/EPOXY/GLASS
PACKING	GRAPHITE	GRAPHITE

GOVERNMENT DESIGNATION:
 TRIM #143 - STYLE A (WAFER)
 TYPES I & II
 TRIM #144 - STYLE A (WAFER)
 TYPES III & IV

VALVE SIZE	PART NUMBER	ADAPT CODE	APL/CID
2 1/2"	143-703-025-360-033	BAB	88-229-2437
3"	143-703-030-360-033	BAC	88-229-2509
3 1/2"	143-703-035-360-033	BAC	88-229-2805
4"	143-703-040-360-033	BAD	88-229-2432
5"	143-703-050-360-033	BAD	88-229-2687
6"	143-703-060-360-033	CAE	88-229-2375
8"	143-703-080-360-033	CAF	88-229-2374
10"	143-703-100-360-033	CAG	88-229-2659
12"	143-703-120-360-033	DAG	
14"	143-703-140-360-033	DAH	

2 1/2"	144-703-025-360-036	BAB	88-229-2337
3"	144-703-030-360-036	BAC	88-229-2338
3 1/2"	144-703-035-360-036	BAC	88-229-2412
4"	144-703-040-360-036	BAD	88-229-2339
5"	144-703-050-360-036	BAD	88-229-2340
6"	144-703-060-360-036	CAE	88-229-2335
8"	144-703-080-360-036	CAF	88-229-2341
10"	144-703-100-360-036	CAG	88-229-2376
12"	144-703-120-360-036	DAG	88-229-2336
14"	144-703-140-360-036	DAH	88-229-2583

VALVES MEET THE REQUIREMENTS OF USCG CATEGORY "P"
 VALVES MANUFACTURED IN ACCORDANCE WITH MIL-V-24624(SH), AMENDMENT 1.

NOTE: USE ONLY THE TRIM 440 MANUAL HANDWHEEL GEAR OPERATORS DESIGNATED FOR USE IN CONJUNCTION WITH TRIM 143 VALVES IN ORDER TO COMPLY WITH PARA 3.10 OF MIL-V-24624(SH), AMENDMENT 1.

NOTE: USE ONLY THE TRIM 487 MANUAL HANDWHEEL GEAR OPERATORS DESIGNATED FOR USE IN CONJUNCTION WITH TRIM 144 VALVES IN ORDER TO COMPLY WITH PARA 3.10 OF MIL-V-24624(SH), AMENDMENT 1.

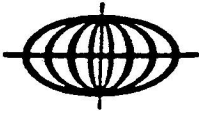


FIG.362 MIL-V-24624 KLOK (STYLE B) LUGGED BODY

PART NUMBER				
TRIM	PART	SIZE	FIG	E. VAR
XXX	703	YYY	362	ZZZ

MATERIALS		
TRIM (XXX)	143	144
BODY	316SS	NAB
DISC	316SS/ENP	MONEL/ENP
STEM	17-4PH SS	MONEL 500
SEAT	SS/CR-RTFE	MONEL/CR-RTFE
BUSHING	SS/NIT-EPOXY	RTFE/EPOXY/GLASS
PACKING	GRAPHITE	GRAPHITE

GOVERNMENT DESIGNATION:
 TRIM #143 - STYLE B (LUG BODY)
 TYPES I & II
 TRIM #144 - STYLE B (LUG BODY)
 TYPES III & IV

VALVE SIZE	PART NUMBER	ADAPT CODE	APL/CID
2 1/2"	143-703-025-362-033	BAB	
3"	143-703-030-362-033	BAC	
3 1/2"	143-703-035-362-033	BAC	
4"	143-703-040-362-033	BAD	
5"	143-703-050-362-033	BAD	
6"	143-703-060-362-033	CAE	
8"	143-703-080-362-033	CAF	
10"	143-703-100-362-033	CAG	88-229-2484
12"	143-703-120-362-033	DAG	
14"	143-703-140-362-033	DAH	

2 1/2"	144-703-025-362-036	BAB	88-229-2501
3"	144-703-030-362-036	BAC	88-229-2510
3 1/2"	144-703-035-362-036	BAC	
4"	144-703-040-362-036	BAD	88-229-2485
5"	144-703-050-362-036	BAD	88-229-2474
6"	144-703-060-362-036	CAE	88-229-2502
8"	144-703-080-362-036	CAF	88-229-2514
10"	144-703-100-362-036	CAG	
12"	144-703-120-362-036	DAG	
14"	144-703-140-362-036	DAH	

VALVES MEET THE REQUIREMENTS OF USCG CATEGORY "P"
 VALVES MANUFACTURED IN ACCORDANCE WITH MIL-V-24624(SH), AMENDMENT 1.

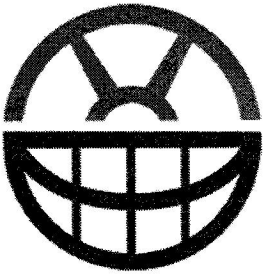
NOTE: USE ONLY THE TRIM 440 MANUAL HANDWHEEL GEAR OPERATORS DESIGNATED FOR USE IN CONJUNCTION WITH TRIM 143 VALVES IN ORDER TO COMPLY WITH PARA 3.10 OF MIL-V-24624(SH), AMENDMENT 1.

NOTE: USE ONLY THE TRIM 487 MANUAL HANDWHEEL GEAR OPERATORS DESIGNATED FOR USE IN CONJUNCTION WITH TRIM 144 VALVES IN ORDER TO COMPLY WITH PARA 3.10 OF MIL-V-24624(SH), AMENDMENT 1.

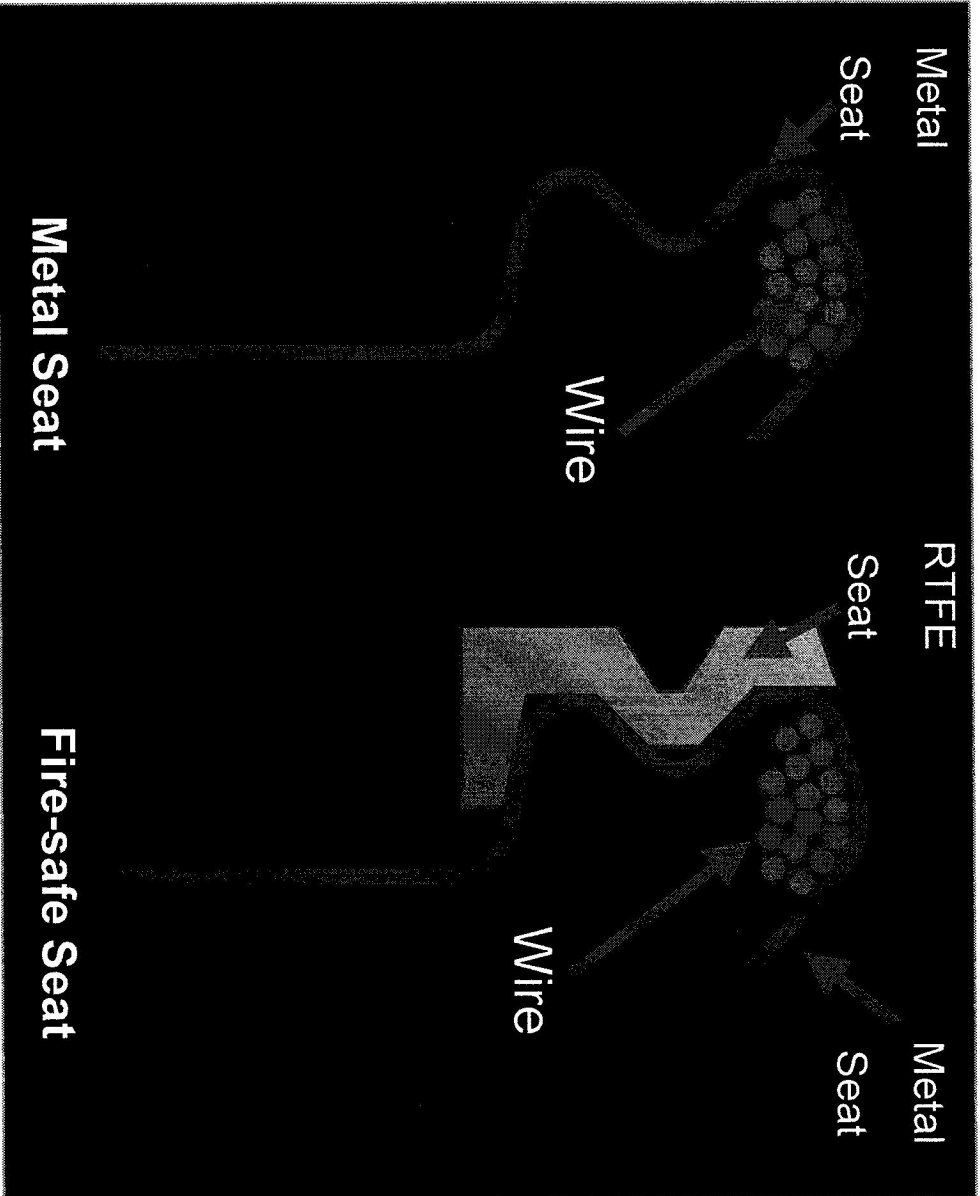
Features, Advantages and Benefits

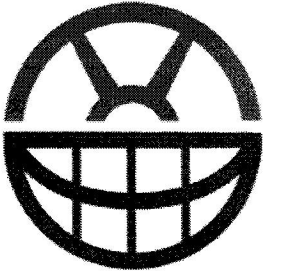
Fab #	Feature	Advantage	Benefit
1	Flush mounted actuation	No brackets or couplings required, fewer nuts and bolts, minimizes hysteresis	Easier assembly and installation, lower cost
2	Fully adjustable stem packing	Full 180 degree wrench clearance for adjustment	Lower maintenance time required, more precise adjustment
3	Unique packing material and geometry	Capable of sealing against pressure as well as against vacuum without packing modification	Lower maintenance costs, increased services available.
4	Disc strength, capacity and control characteristics	High C_v , High flow, Low disc deflection, equal linear characteristic, 2 piece disc / stem design	Lower energy cost, increased sealability at all pressures, better-in-line controllability
5	Seat geometry, function, and performance	Interference fit design, provides bi-directional tight shutoff	Not depend on-line pressure for sealability, increased performance, longer cycle life.
6	Extended body neck	Allows 2 of insulation on the connecting piping.	Lower energy costs, allows for ease of packing and actuator maintenance.
7	ANSI, ISO, JIS, DIN, BS, Flange Adaption	Same valve design is used worldwide	Ease of spare parts procurement, economically priced spares
8	Allows metal spiral-type-flange gaskets	Standard K-LOK flange surfaces are uninterrupted.	Allows standard spiral wound gaskets to be used.
9	Cast internal travel stops	No travel stops required.	Easier adjustment and maintenance. No welding in body.
10	Optional lay length	Able to fit K-LOK in non-standard lay length requirements.	Lower cost, short / standard deliveries.
11	Tangentially located tapered disc to stem pins	Strongest pinning method possible, pins are stressed compressively, not put in shear stress.	Lower maintenance repairs and longer performance life.
12	Rocker arm packing adjustment	Allows uneven tightening of gland bolts w/o side loading the stem packing.	Ease of maintenance, longer packing life.
13	Double offset disc design	Provides the disc with a camming effect that lifts the disc away from the seat reducing seat contact wear	Longer cycle life and seat sealability
14	Fire safe seat configuration	Bi-directional service, provides constant 2 point seal of the metal & RTFE seat components, allows partial burn of the seat without excessive leakage	Higher degree of fire damage resistance





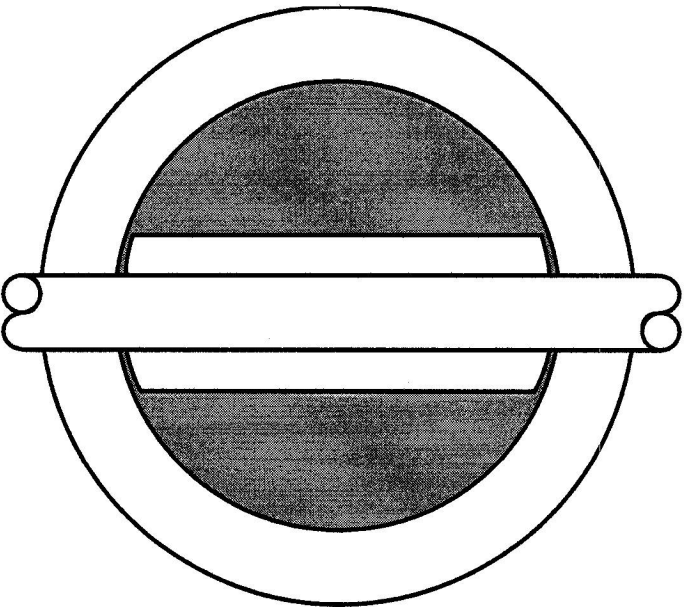
Metal and Fire-safe Seat



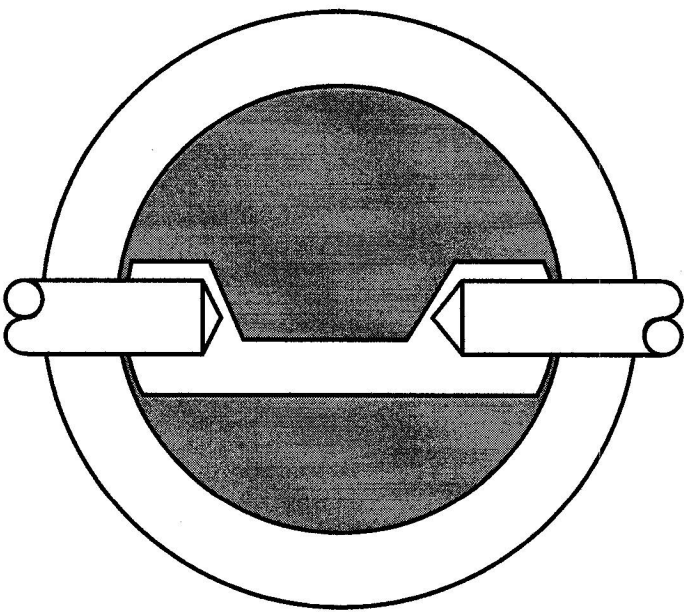


Higher Aspect Ratio

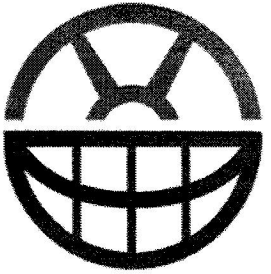
Competitor One-Piece Stem



K-LOK Two-Piece Stem



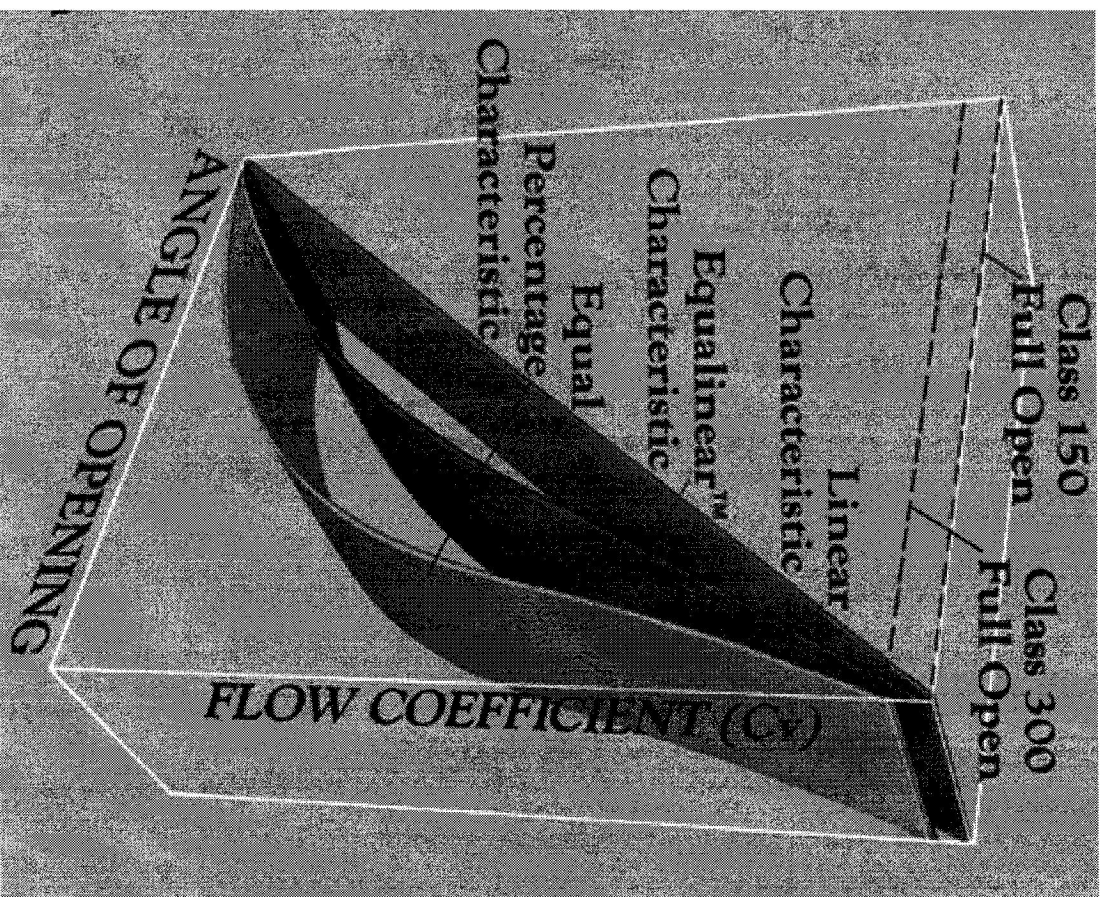
$\text{Aspect Ratio} = \text{Open Area} / \text{Disc Area}$

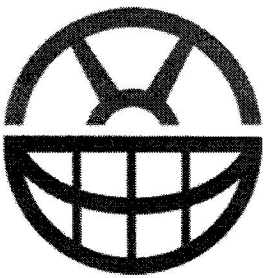


Flow Characteristic

Equal-linear Characteristic

- Control between 20° and 70°

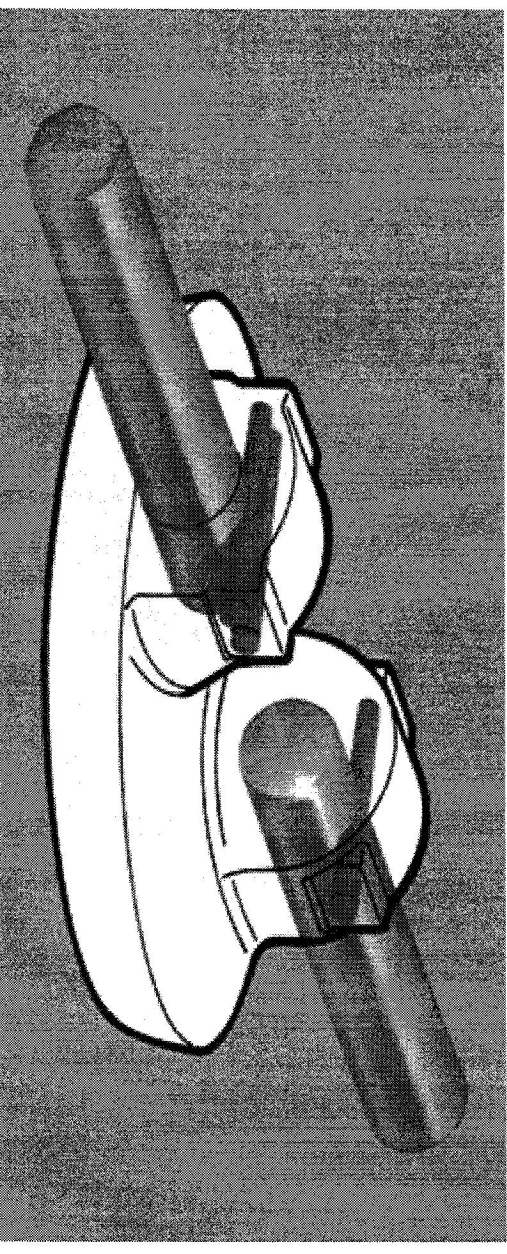


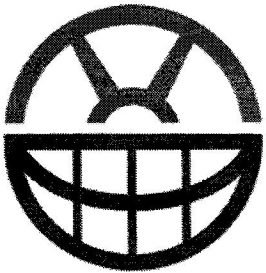


Features and Benefits

Disc

- Two-piece stem
- Double offset
- High aspect ratio
- Controllability from 20° to 70° open
- Minimal disc deflection while under pressure





Metal and Fire-safe Seat Design

Metal and Fire-safe Seat

True Interference design

- Capable of ANSI 150 pressure shutoff
- Bi-directional shutoff

Firesafe: ANSI Class VI shutoff

Metal: ANSI Class IV shutoff

Size range : 2" -24"

Materials available:

- 316 Stainless Steel / Flash Chrome Plated
- Monel / Flash Chrome Plated

