

GRM

SERIES GRM CLAMPS R JAW STYLE

*Compact Jaw Profile for Limited Space Applications
Largest Total Clamp Force of All Series GRM2 Clamps*



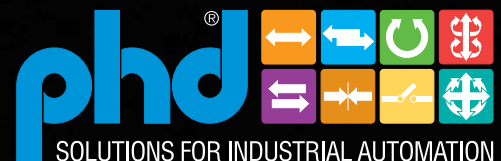
**ISO-9001
CERTIFIED**

Quality Management
System Certified

GRMR01



PHD is a member of the
MAC Distributor Network



PHD, Inc. • P.O. Box 9070 • Fort Wayne, IN 46899 • (260) 747-6151 • FAX (260) 747-6754
www.phdinc.com • phdinfo@phdinc.com

ORDERING DATA: SERIES GRM CLAMP JAW STYLE "R"

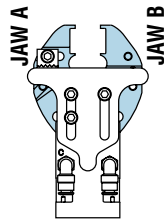
INDEX:
Ordering Data
 Page 2

Benefits
 Page 3

**Dimensions &
 Jaw Rotations**
 Pages 4 to 7

Engineering Data
 Page 8

**Tip Mounting &
 Combinations**
 Page 8



TO ORDER SPECIFY:

Size, Mounting, Jaw Style Option, Design No., Jaw Opening (A & B), Jaw Tip Option (A & B), and Fitting Option if desired.

UNIT SIZE
 2 - 32 mm Short

JAW STYLE OPTION
 R - Short Standard Jaw
 (to accept Tip Options)

GRM 2 S R - 2 - 60 DDB - LAA

JAW OPENING - JAW A
 00 - 0° Opening
 22 - 22-1/2° Opening
 35 - 35° Opening
 45 - 45° Opening
 60 - 60° Opening
 (See Note 1)

JAW OPENING - JAW B
 00 - 0° Opening
 22 - 22-1/2° Opening
 35 - 35° Opening
 45 - 45° Opening
 60 - 60° Opening
 (See Note 1)

DESIGN NO.
 2 - Imperial
 6 - Metric
 (See Note 2)

MOUNTING	
T - Rear Mounting Threads (Standard)	
C - 90° Spherical Mounting Bracket	
R - Non-Spherical Mounting Bracket	
S - Spherical Mounting Bracket	
W - Oversize Spherical Mounting Bracket	
A - Rear Spherical Mounting Bracket	
B - Oversize Rear Spherical Mtg Bracket	
P - Rear Mounting Plate	

JAW TIP OPTIONS - JAW A		
Color	Material Thickness	
	0 to 1.50 mm	1.51 to 3.01 to 4 mm
No tip	Blank	Red
Single Cone Point	SCB	SCR
Double Cone Point	DCB	DCR
Single Diamond Point	SDB	SDR
Double Diamond Point	ddb	DDR
Single Urethane Pad	SUB	SUB
Double Urethane Pad	DUB	DUB

(See Note 4)

JAW TIP OPTIONS - JAW B		
Color	Material Thickness	
	0 to 1.50 mm	1.51 to 3.01 to 4 mm
No tip	Blank	Red
Single Cone Point	SCB	SCR
Double Cone Point	DCB	DCR
Single Diamond Point	SDB	SDR
Double Diamond Point	ddb	DDR
Single Urethane Pad	SUB	SUB
Double Urethane Pad	DUB	DUB

(See Note 4)

PORT FITTINGS	
BLANK	- No Fitting
LAA	- 90° Swivel Elbow, Metal
LBB	- 90° Swivel Elbow, Plastic
LCC	- 90° Swivel Elbow, Metal

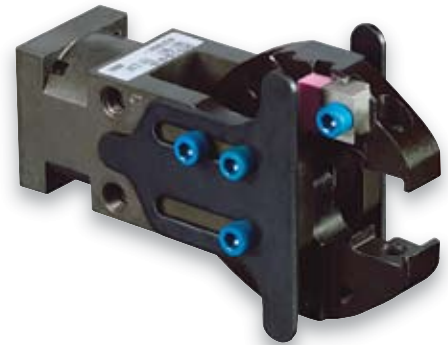
GRM2xx
 CLOSE
 OPEN

- NOTES:**
- 1) The 0° jaw rotates open no greater than 3° during the clamp cycle. The 0° jaw returns to 0° position as the opposing jaw reaches the fully open and fully closed position.
 - 2) Metric units have metric ports and mounting. Imperial units have imperial ports and mounting.
 - 3) See the GRM Clamps and Accessories catalog for non-standard options.
 - 4) Cone point against cone point tip combinations are not allowed due to point overlap.

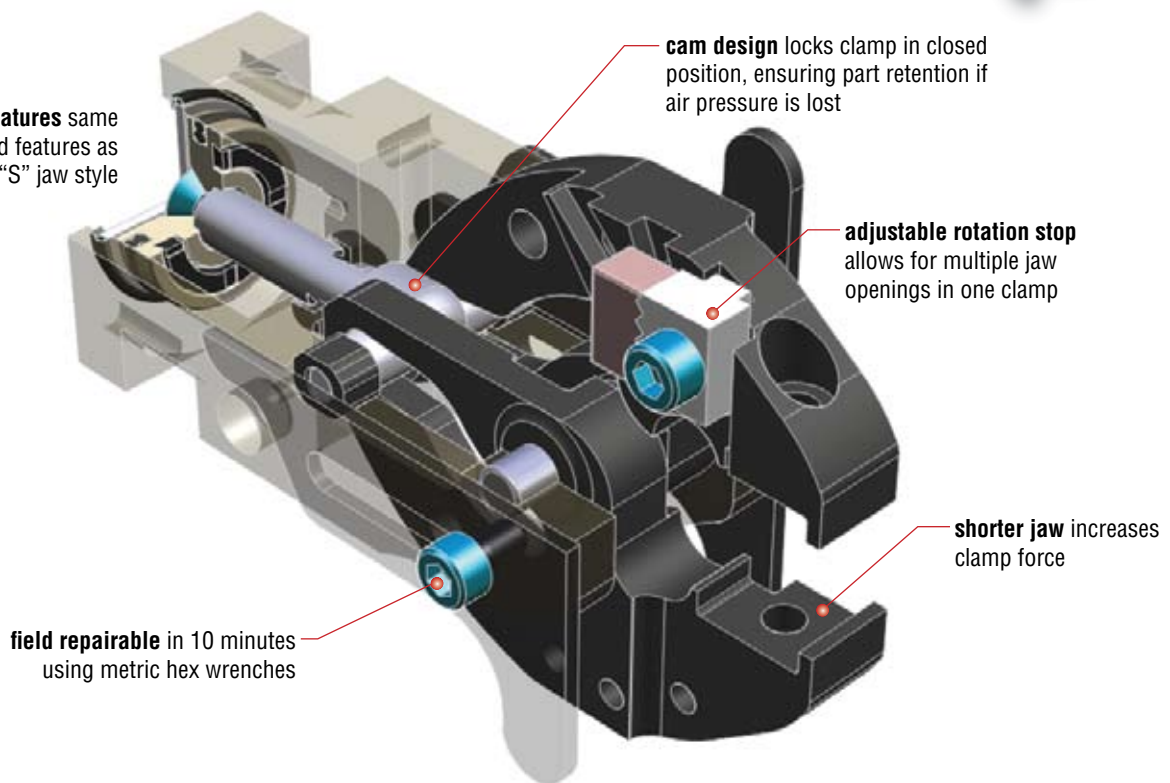
SERIES GRM CLAMP JAW STYLE "R"



IDEAL FOR CLAMPING IN APPLICATIONS WHERE SPACE IS LIMITED OR INCREASED CLAMP FORCE IS DESIRED



standard features same options and features as "S" jaw style



cam design locks clamp in closed position, ensuring part retention if air pressure is lost

adjustable rotation stop allows for multiple jaw openings in one clamp

shorter jaw increases clamp force

field repairable in 10 minutes using metric hex wrenches

Major Benefits

- Small profile make these clamps ideal for clamping in very tight openings.
- Compact envelope size with clamp force up to 330 lb [1468 N]. –B08 option increases clamp force up to 676 [3007 N].
- Simple design, long life, high grip force, and fast field maintenance.
- Available in two jaw styles and seven different jaw opening combinations.
- Jaws lock in closed position, ensuring part retention even when air pressure is removed.
- Two adjustable hardened-steel impact plates eliminate damage from panel impact.
- 24 hour delivery

Industry Uses

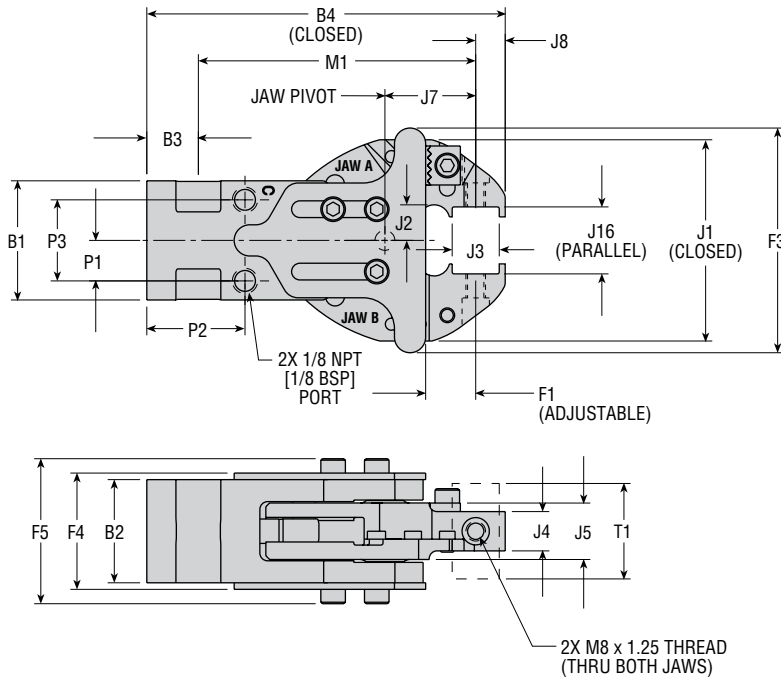
- Limited space environments
- Material handling
- Assembly
- General industrial automation



Contact your local distributor for Clamp unit pricing.

DIMENSIONS: SERIES GRM CLAMP JAW STYLE "R" - SIZE 2

GRM2xR-x-xxxxx-xxxxx



LETTER DIM	MODEL NUMBER	
	GRM2xR	
	in	mm
B1	1.910	48.5
B2	1.654	42.0
B3	.827	21.0
B4 (CLOSED)	5.748	146.0
F1 MAX	.803	20.4
F1 MIN	.292	7.4
F3	3.602	91.5
F4	1.864	47.3
F5	2.336	59.3
J1 (CLOSED)	3.226	81.9
J2 (CLOSED)	.570	14.5
J3*	.755	19.2
J4*	.630	16.0
J5	.906	23.0
J7	1.456	37.0
J8	.472	12.0
J16 (PARALLEL)	1.074	27.3
P1	.650	16.5
P2	1.575	40.0
P3	1.300	33.0
M1	4.448	113.0
T1**	1.530	38.9

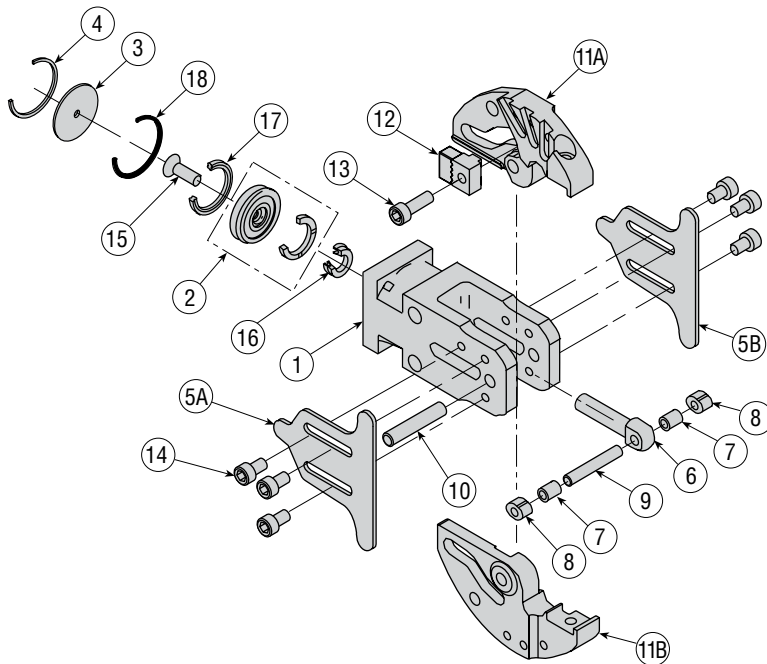
* TOLERANCE FOR J3 & J4 = ± .003 (± .076)

** T1 IS THE LARGEST TIP AVAILABLE.

NOTE:

SEE TIP DIMENSION AND MOUNTING BRACKET PAGES IN THE GRM CLAMPS AND ACCESSORIES CATALOG.

PARTS BREAKDOWN



KEY	DESCRIPTION	PART NUMBER
		GRM2xR
1	BODY ASSEMBLY -imperial -metric	63947-11
		63947-12
2	PISTON & SHOCK PAD	63949
3	BORE PLUG	61467
4	RETAINING RING	57618-034
5A	IMPACT PLATE	63952-02
5B	IMPACT PLATE	63952-02
6	ROD/JAW DRIVER	63950
7	JAW BUSHING	62097
8	SLIDER BUSHING	62099-01
9	ROD/JAW DRIVER PIN	52416-009
10	PIVOT PIN	62176-01
11A	JAW (A)	79532-01
11B	JAW (B)	79532-01
12	STOP BLOCK	74388
13	STOP BLOCK SHCS	59104-118
14	IMPACT PLATE SHCS	59104-114
15	PISTON SFHCS	59104-600
16	ROD SEAL	77635-009
17	PISTON SEAL	74042-008
18	BORE PLUG SEAL	3642-027-1

KIT DESCRIPTION	KIT NUMBER
	GRM2xR
IMPACT PLATE KIT	63967-02
JAW REBUILD KIT	62152-01
SEAL KIT	63965-02
FASTENER KIT	63966-02

NOTE: SEE MOUNTING BRACKET KIT PAGE IN THE GRM CLAMPS AND ACCESSORIES CATALOG.

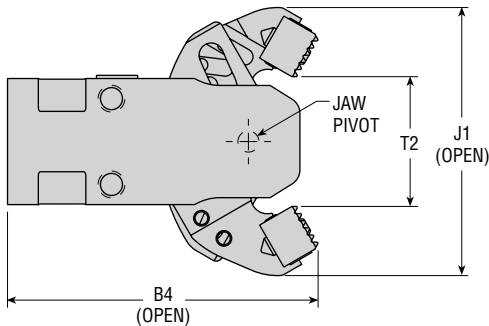
JAW ROTATION DIMENSIONS: GRM CLAMP JAW STYLE "R"

GRM2xR-x-60xxx-60xxx STOP BLOCK NOT REQUIRED

60° Both Jaws Rotate

LETTER DIM	MODEL NUMBER	
	GRM2xR	
	in	mm
B4 (OPEN)	4.707	119.6
J1 (OPEN)	4.060	103.1
T2	1.965	49.9

NOTE:
THE STOP BLOCK MOUNTING SCREW IS EXTRA LONG AND MUST BE USED TO MOUNT STOP BLOCK IN ANY LOCATION ON BODY OR JAWS.
IF THIS EXTRA LONG SCREW IS ASSEMBLED INTO THE IMPACT PLATE WITHOUT THE STOP BLOCK, IT WILL HIT AND DAMAGE THE JAWS.

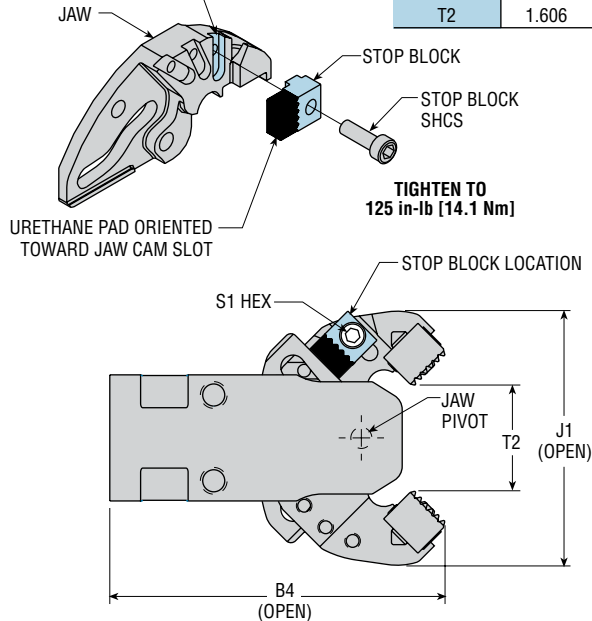


GRM2xR-x-45xxx-45xxx ONE STOP BLOCK REQUIRED

45° Both Jaws Rotate

LETTER DIM	MODEL NUMBER	
	GRM2xR	
	in	mm
B4 (OPEN)	5.075	128.9
J1 (OPEN)	3.848	97.7
S1	.197	5.0
T2	1.606	40.8

ASSEMBLE STOP BLOCK IN THIS SLOT FOR GRM2xR-x-45xxx-45xxx UNITS

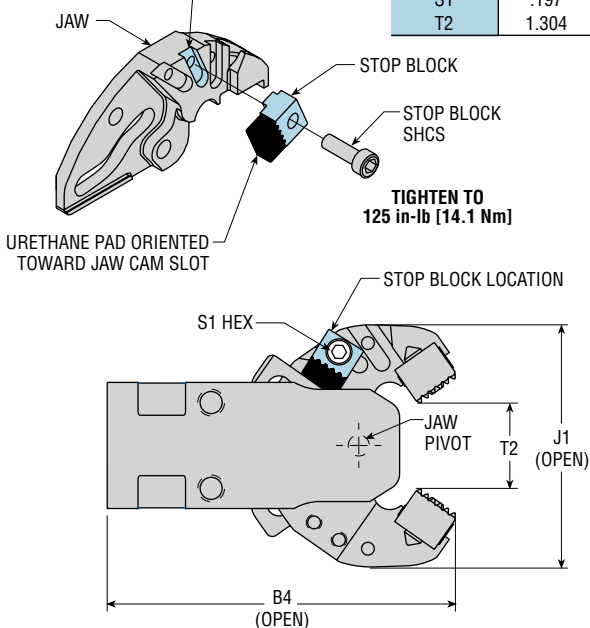


GRM2xR-x-35xxx-35xxx ONE STOP BLOCK REQUIRED

35° Both Jaws Rotate

LETTER DIM	MODEL NUMBER	
	GRM2xR	
	in	mm
B4 (OPEN)	5.274	134.0
J1 (OPEN)	3.667	93.1
S1	.197	5.0
T2	1.304	33.1

ASSEMBLE STOP BLOCK IN THIS SLOT FOR GRM2xR-x-35xxx-35xxx UNITS

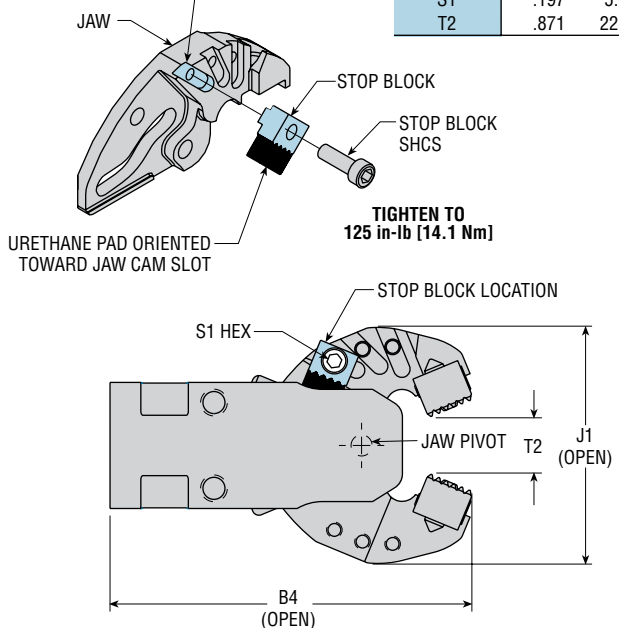


GRM2xR-x-22xxx-22xxx ONE STOP BLOCK REQUIRED

22° Both Jaws Rotate

LETTER DIM	MODEL NUMBER	
	GRM2xR	
	in	mm
B4 (OPEN)	5.481	139.2
J1 (OPEN)	3.573	90.8
S1	.197	5.0
T2	.871	22.1

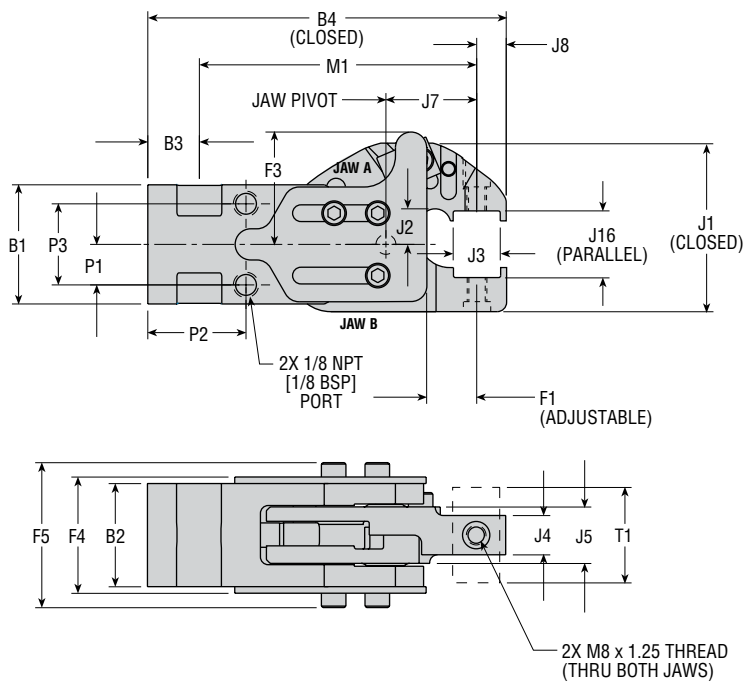
ASSEMBLE STOP BLOCK IN THIS SLOT FOR GRM2xR-x-22xxx-22xxx UNITS



All dimensions are reference only unless specifically tolerated.

DIMENSIONS: SERIES GRM CLAMP JAW STYLE "R" - SIZE 2

GRM2xR-x-xxxxx-00xxx



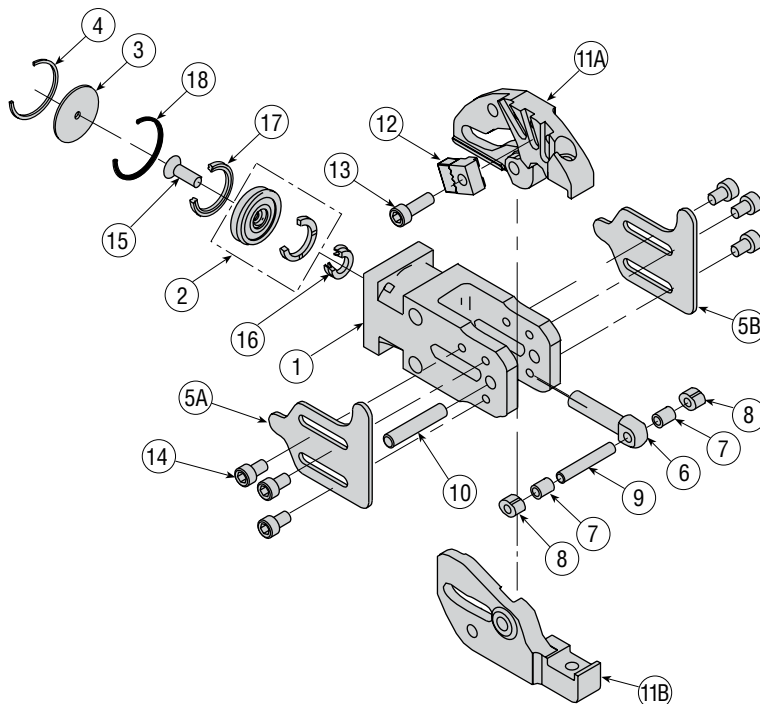
LETTER DIM	MODEL NUMBER	
	GRM2xR	
	in	mm
B1	1.910	48.5
B2	1.654	42.0
B3	.827	21.0
B4 (CLOSED)	5.748	146.0
F1 MAX	.803	20.4
F1 MIN	.292	7.4
F3	1.801	45.7
F4	1.864	47.3
F5	2.336	59.3
J1 (CLOSED)	2.695	68.5
J2 (CLOSED)	.570	14.5
J3*	.755	19.2
J4*	.630	16.0
J5	.906	23.0
J6	1.613	41.0
J7	1.456	37.0
J8	.472	12.0
J16 (PARALLEL)	1.074	27.3
P1	.650	16.5
P2	1.575	40.0
P3	1.300	33.0
M1	4.448	113.0
T1**	1.530	38.9

* TOLERANCE FOR J3 & J4 = ± .003 [± .076]
 ** T1 IS THE LARGEST TIP AVAILABLE.

NOTES:

- 1) SEE TIP DIMENSION AND MOUNTING BRACKET PAGES IN THE GRM CLAMPS AND ACCESSORIES CATALOG.
- 2) THE 0° JAW ROTATES 3° DURING THE CLAMP CYCLE, OPENING THE END OF THE JAW .079 [2.0]. THE JAW RETURNS TO THE 0° POSITION AS THE OPPOSING JAW REACHES FULL OPEN OR CLOSED.

PARTS BREAKDOWN



KEY	DESCRIPTION	PART NUMBER
		GRM2xR
1	BODY ASSEMBLY -imperial	63947-11
		-metric
2	PISTON & SHOCK PAD	63949
3	BORE PLUG	61467
4	RETAINING RING	57618-034
5A	IMPACT PLATE	63952-01
5B	IMPACT PLATE	63952-01
6	ROD/JAW DRIVER	63950
7	JAW BUSHING	62097
8	SLIDER BUSHING	62099-01
9	ROD/JAW DRIVER PIN	52416-009
10	PIVOT PIN	62176-01
11A	JAW (A)	79532-01
11B	JAW (B)	79533-01
12	STOP BLOCK	74388
13	STOP BLOCK SHCS	59104-118
14	IMPACT PLATE SHCS	59104-114
15	PISTON SFHCS	59104-600
16	ROD SEAL	77635-009
17	PISTON SEAL	74042-008
18	BORE PLUG SEAL	3642-027-1

KIT DESCRIPTION	KIT NUMBER
	GRM2xR
IMPACT PLATE KIT	63967-02
JAW REBUILD KIT	62152-01
SEAL KIT	63965-02
FASTENER KIT	63966-02

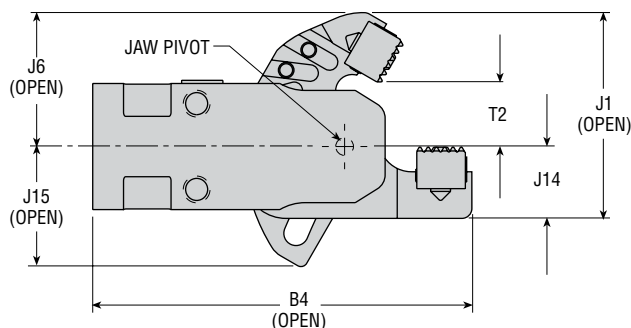
NOTE: SEE MOUNTING BRACKET KIT PAGE IN THE GRM CLAMPS AND ACCESSORIES CATALOG.

JAW ROTATION DIMENSIONS: GRM CLAMP JAW STYLE "R"

GRM2xR-x-60xxx-00xxx

STOP BLOCK NOT REQUIRED

60° Jaw A Rotates



LETTER DIM	MODEL NUMBER	
	GRM2xR	
	in	mm
B4 (OPEN)	5.748	146.0
J1 (OPEN)	3.112	79.0
J6 (OPEN)	2.030	51.6
J14	1.082	27.5
J15 (OPEN)	1.811	46.0
T2	.984	25.0

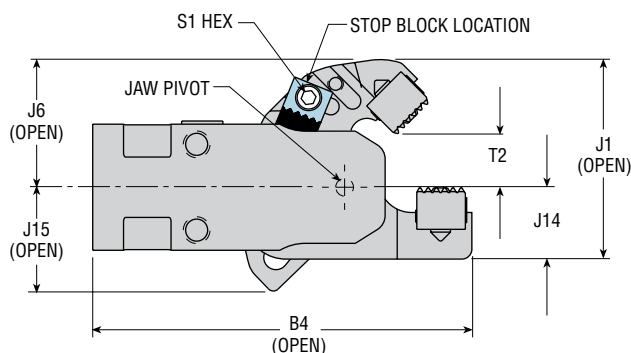
NOTE:
THE STOP BLOCK MOUNTING SCREW IS EXTRA LONG AND MUST BE USED TO MOUNT STOP BLOCK IN ANY LOCATION ON BODY OR JAWS.

IF THIS EXTRA LONG SCREW IS ASSEMBLED INTO THE IMPACT PLATE WITHOUT THE STOP BLOCK, IT WILL HIT AND DAMAGE THE JAWS.

GRM2xR-x-45xxx-00xxx

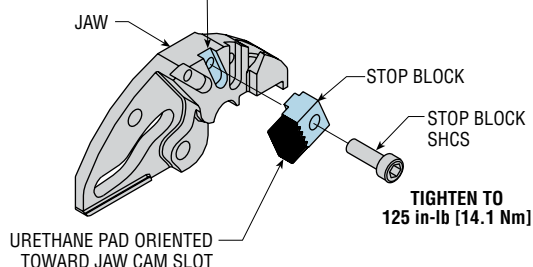
ONE STOP BLOCK REQUIRED

45° Jaw A Rotates



LETTER DIM	MODEL NUMBER	
	GRM2xR	
	in	mm
B4 (OPEN)	5.748	146.0
J1 (OPEN)	3.003	76.3
J6 (OPEN)	1.924	48.9
J14	1.082	27.5
J15 (OPEN)	1.582	40.2
S1	.197	5.0
T2	.803	20.4

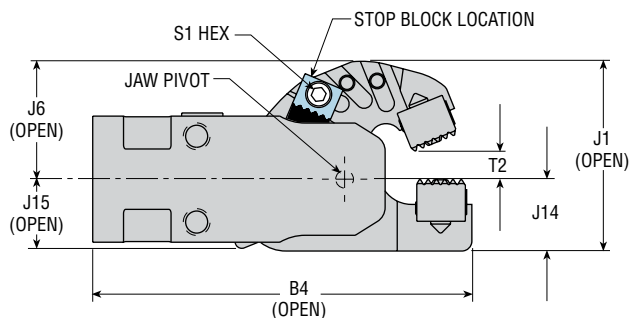
ASSEMBLE STOP BLOCK IN THIS SLOT FOR GRM2xR-x-45xxx-00xxx UNITS



GRM2xR-x-22xxx-00xxx

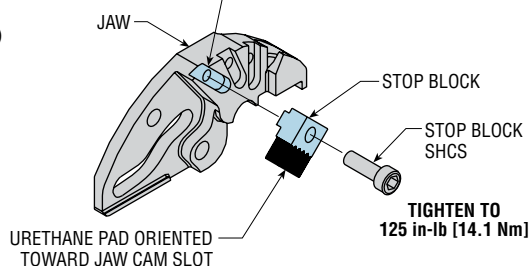
ONE STOP BLOCK REQUIRED

22° Jaw A Rotates



LETTER DIM	MODEL NUMBER	
	GRM2xR	
	in	mm
B4 (OPEN)	5.748	146.0
J1 (OPEN)	2.869	72.9
J6 (OPEN)	1.788	45.4
J14	1.082	27.5
J15 (OPEN)	1.044	26.5
S1	.197	5.0
T2	.436	11.1

ASSEMBLE STOP BLOCK IN THIS SLOT FOR GRM2xR-x-22xxx-00xxx UNITS



All dimensions are reference only unless specifically tolerated.

ENGINEERING DATA: SERIES GRM CLAMP JAW STYLE "R"

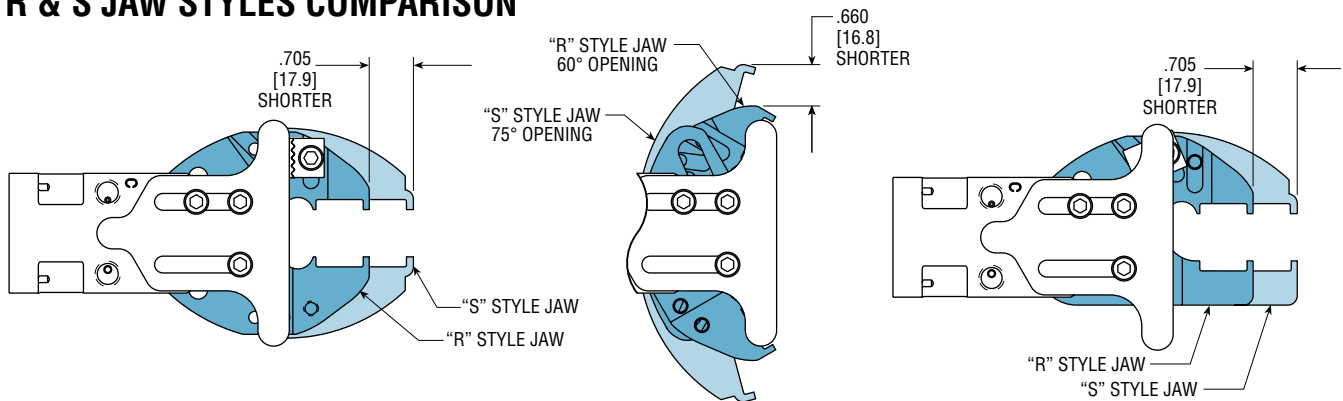
SIZE 2 SPECIFICATIONS

MODEL	UNIT WEIGHT*		TOTAL CLAMP FORCE at 87 psi [6 bar]		MAXIMUM EXTERNAL LOAD	
	lb	kg	lb	N	lb	N
GRM2xR-x-60-60	1.96	0.89	330	1468	300	1334
GRM2xR-x-45-45						
GRM2xR-x-35-35						
GRM2xR-x-22-22						
GRM2xR-x-60-00	1.94	0.88	330	1468	300	1334
GRM2xR-x-45-00						
GRM2xR-x-22-00						

*Weight is for basic clamp without mounting bracket or tips

SPECIFICATIONS	SERIES GRM
WORKING PRESSURE	30 psi min. - 100 psi max. [2 bar min. - 7 bar max.]
DISPLACEMENT (OPEN OR CLOSE)	1.15 in ³ [18.8 cm ³]
BODY	Hardcoat Aluminum
JAWS	Hardened Steel
SEALS	Bidirectional Piston Seal Lip Type Rod Seal
LUBRICATION	Permanent for Non-Lube Air
TEMPERATURE LIMITS	-20° to 180°F [-30° to 82°C]

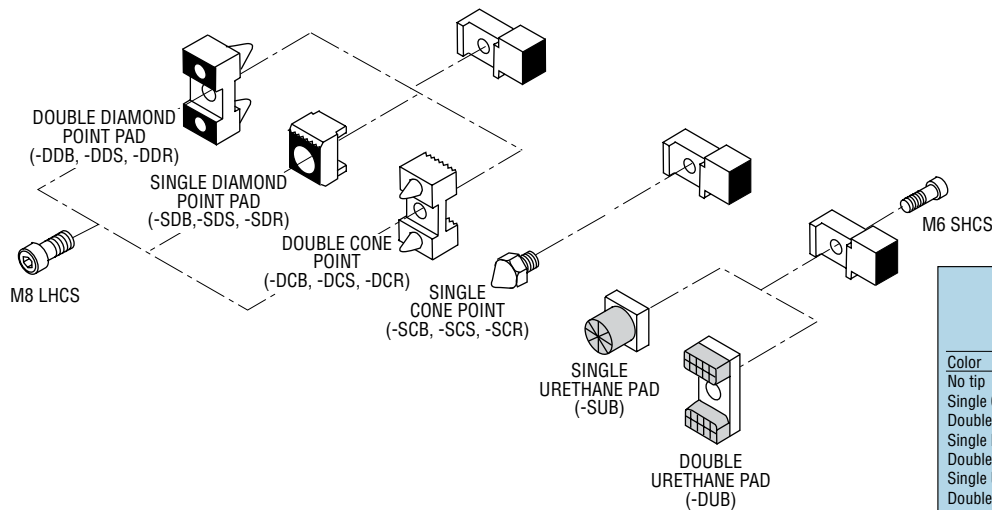
R & S JAW STYLES COMPARISON



GRM2xR-x-45-45 vs. GRM2xS-x-45-45

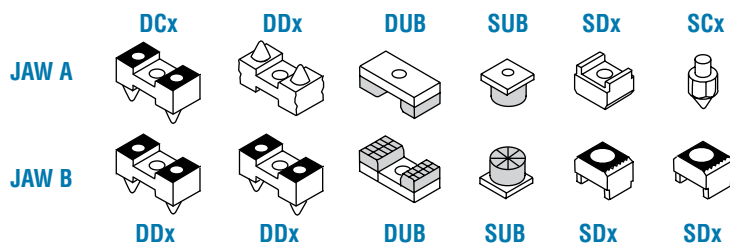
GRM2xR-x-45-00 vs. GRM2xS-x-45-00

TIP MOUNTING



	JAW TIP OPTIONS - JAW A		
	Material Thickness		
	0 to 1.50 mm	1.51 to 3 mm	3.01 to 4 mm
Color	Black	Silver	Red
No tip	Blank	Blank	Blank
Single Cone Point	SCB	SCS	SCR
Double Cone Point	DCB	DCS	DCR
Single Diamond Point	SDB	SDS	SDR
Double Diamond Point	DDB	DDS	DDR
Single Urethane Pad	SUB	SUB	SUB
Double Urethane Pad	DUB	DUB	DUB

RECOMMENDED TIP COMBINATIONS



	JAW TIP OPTIONS - JAW B		
	Material Thickness		
	0 to 1.50 mm	1.51 to 3 mm	3.01 to 4 mm
Color	Black	Silver	Red
No tip	Blank	Blank	Blank
Single Cone Point	SCB	SCS	SCR
Double Cone Point	DCB	DCS	DCR
Single Diamond Point	SDB	SDS	SDR
Double Diamond Point	DDB	DDS	DDR
Single Urethane Pad	SUB	SUB	SUB
Double Urethane Pad	DUB	DUB	DUB

NOTE: Cone point against cone point tip combinations are not allowed due to point overlap.