

## KEYSTONE

### Manual override for Keystone pneumatic actuators.

#### Features

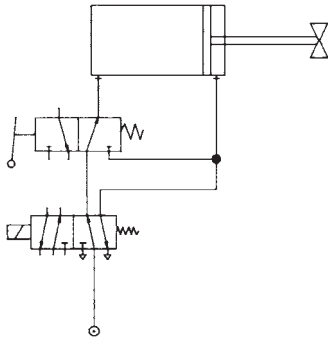
- Suitable for direct mounting to all Keystone valves and actuators, with the exception of scotch yoke design models, giving unique space saving design.
- Readily adaptable to suit all Rotary actuators.
- Can be field installed into existing equipment.
- Auto venting and isolation of mains air on engagement of manual override prevents manual operation against any air trapped in the actuator. This ensures safety to personnel should the air supply be reinstated unexpectedly.
- Low rimpull.
- Robust construction with various paint coatings for corrosion and environmental protection.
- The gear unit is self locking which prevents handwheel spinback when used in conjunction with spring return units.
- According ISO standard.



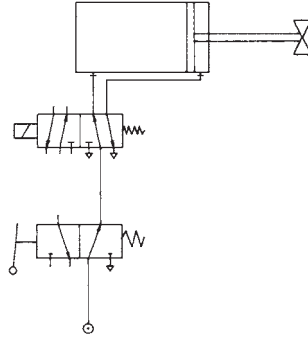
#### General application

For the manual operation of Keystone actuators in event of pneumatic or electric failure.

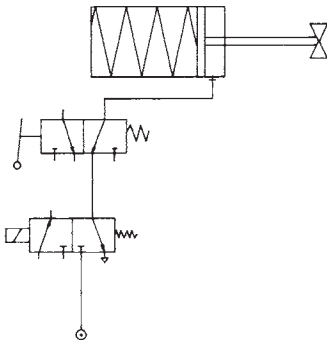
# Dec clutchable gear unit Figure 453-454



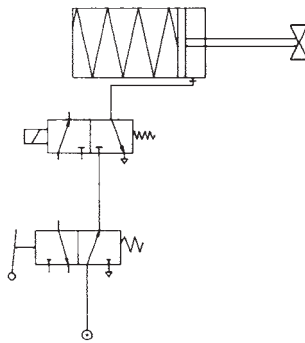
Circuit layout showing air to air with remote solenoid (acts as equalising valve).



Circuit layout showing air to air with local solenoid (acts as vent valve).



Circuit layout showing spring return with remote solenoid (acts as vent valve).



Circuit layout showing spring return with local solenoid (acts as vent valve).

Note: These units cannot be used in conjunction with scotch yoke actuators.  
(i.e. models 100/190/380SY)

## Torque figures (imperial) for gearunits

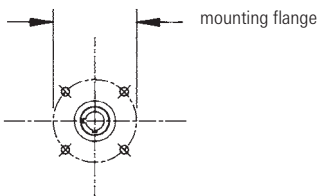
GUD	Rated torque lb-in	Ratio	Mech. adv.	Input torque at rated torque lb-in	Rimpull at rated torque (lbf) handwheel diameter (ins)				
					6"	12"	18"	24"	36"
020	2200	28	5.5	400	133	67			
060	6600	32	7.0	943		157	104		
150	22000	68	13.5	1630		272	181	136	
240	30000	68	15.0	2000			222	167	111
500	66000	80	23.0	2870			319	240	160
500SG	66000	160	55.0	1200			133	100	67

## Torque figures (metric) for gearunits

GUD	Rated torque lb-in	Ratio	Mech. adv.	Input torque at rated torque lb-in	Rimpull at rated torque (N) handwheel diameter (mm)				
					150	300	450	600	900
020	248	28	5.5	45	600	300			
060	746	32	7.0	107		710	474		
150	2485	68	13.5	184		1226	818	612	
240	3390	68	15.0	226			1004	754	502
500	7458	80	23.0	324			1442	1080	720
500SG	7458	160	55.0	136			602	452	300

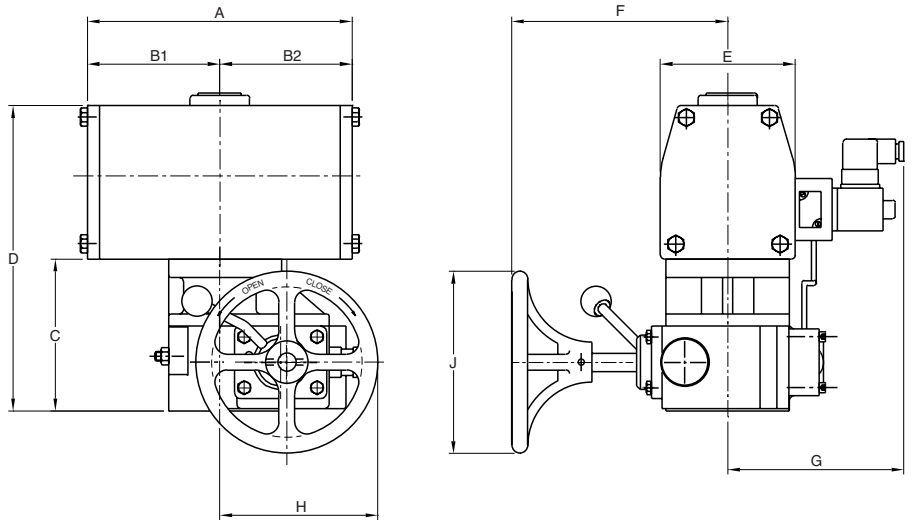
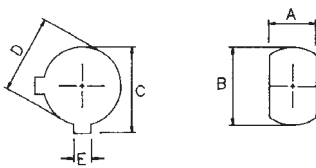
### Mounting flange in mm

Type	PCD	Bolts
P2	82.6	4 x M10
P3	127.5	4 x M12
P4	165.1	4 x M20
P5	210.5	4 x M20
P6(F05)	50.5	4 x M6
P7(F07)	70.5	4 x M8
P8(F12)	125.5	4 x M12
P9(F16)	165.5	4 x M20



### Bore sizes in mm

GUD	A	B	C	D	E
453-020	-	-	31.8	28.58	6.35
453-060	-	-	31.8	28.58	6.35
453-150	-	-	38.53	34.92	7.93
453-150	-	-	45.5	41.28	12.7
453-240	-	-	52.2	47.62	12.7
453-240	-	-	61.34	57.15	12.7
453-500	-	-	52.2	47.62	12.7
453-500	-	-	61.34	57.15	12.7
454-020	14	20	-	-	-
454-060	22	30	-	-	-
454-150	-	-	43.3	40.0	12.7
454-150	-	-	53.8	50.0	14.7
454-240	-	-	43.3	40.0	12.5
454-240	-	-	53.8	50.0	14.5
454-500	-	-	43.3	40.0	12.5
454-500	-	-	53.8	50.0	14.5
454-500	-	-	79.9	75.0	20.5



### Valve dimensions in mm

Type	Mounted		Mounting Flange										Gear Turns		
	790	Type	A	B1	B2	C	D	E	F	G	H	J	Ratio	90°	Mass kg
453-020	006	P2	178	89	89	125	230	86	178	128	125	150	36:1	9	16
453-020	006S	P2	330	165	165	125	230	86	178	128	125	150	36:1	9	19
453-020	012	P2	218	109	109	125	252	112	178	141	125	150	36:1	9	19
453-020	012S	P2	389	194.5	194.5	125	252	112	178	141	125	150	36:1	9	25
453-060	024	P2/P3	240	220	120	145	292	136	305	153	213	300	40:1	10	27
453-060	024S	P2/P3	420	210	210	145	292	136	305	153	213	300	40:1	10	37
453-060	036	P2/P3	282	141	141	145	320	152	305	161	213	300	40:1	10	32
453-060	036S	P2/P3	460	230	230	145	320	152	305	161	213	300	40:1	10	45
453-150	070	P3/P4	394	259	135	168	385	203	343	187	258	300	78:1	20	60
453-150	070S	P3/P4	597	462	135	168	385	203	343	187	258	300	78:1	20	76
453-240	140	P3/P4	517	258.5	258.5	190	406	203	414	187	427	600	68:1	17	89
453-240	140S	P3/P4	923	461.5	461.5	190	406	203	414	187	427	600	68:1	17	120
453-500	140S	P4/P5	923	461.5	461.5	205	421	203	445	187	455	600	80:1	20	147
453-500SG	280	P4/P5	785	392.5	392.5	205	472	254	445	187	455	600	160:1	40	158
453-500SG	280	P4/P5	1407	703.5	703.5	205	472	254	445	187	455	600	160:1	40	232
454-020	006	P6/P7	178	89	89	125	230	86	178	128	125	150	36:1	9	16
454-020	006S	P6/P7	330	165	165	125	230	86	178	128	125	150	36:1	9	19
454-020	012	P6/P7	218	109	109	125	252	112	178	141	125	150	36:1	9	19
454-020	012S	P6/P7	389	194.5	194.5	125	252	112	178	141	125	150	36:1	9	25
454-060	024	P7/P8	240	120	120	145	292	136	305	153	213	300	40:1	10	27
454-060	024S	P7/P8	420	210	210	145	292	136	305	153	213	300	40:1	10	37
454-060	036	P7/P8	282	141	141	145	320	152	305	161	213	300	40:1	10	32
454-060	036S	P7/P8	460	230	230	145	320	152	305	161	213	300	40:1	10	45
454-150	070	P8/P9	400	262	138	168	385	203	343	187	258	300	78:1	20	60
454-150	070S	P8/P9	603.5	462.5	138	168	385	203	343	187	258	300	78:1	20	76
454-240	140	P8/P9	517	258.5	258.5	190	406	203	414	187	427	600	68:1	17	89
454-240	140S	P8/P9	923	461.5	461.5	190	406	203	414	187	427	600	68:1	17	120
454-500	140S	P8/P9	923	461.5	461.5	205	421	203	445	187	455	600	80:1	20	147
454-500SG	280	P8/P9	785	392.5	392.5	205	472	254	445	187	455	600	160:1	40	158
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