

INDUSTRIAL PRODUCTS

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- VHM - ULTRA grade of carbide for high performance
- Dual stepped core for optimal stability
- Ideal design for pocket milling in MQL & HSC
- Suitable for materials up to 48 HRC
- AlCrN for longer tool life

Product Code	Description	Size mm	Shank Dia mm	Length of Cut	Overall Length
CHMES06	6.0 Reg AlCrN Carbide Endmill Harmony	6	6	13	57
CHMES08	8.0 Reg AlCrN Carbide Endmill Harmony	8	8	19	63
CHMES10	10.0 Reg AlCrN Carbide Endmill Harmony	10	10	22	72
CHMES12	12.0 Reg AlCrN Carbide Endmill Harmony	12	12	26	83
CHMES14	14.0 Reg AlCrN Carbide Endmill Harmony	14	14	26	83
CHMES16	16.0 Reg AlCrN Carbide Endmill Harmony	16	16	32	92
CHMES20	20.0 Reg AlCrN Carbide Endmill Harmony	20	20	38	104

Carbide Endmills - Regular

CUTTING TOOLS



- For precision finish milling applications
- Suitable for materials up to 1600 N/mm²
- TiAlN for longer tool life

Product Code	Description	Size mm	Shank Dia mm	Length of Cut	Overall Length
CTMES02	2.0 Reg TiAlN Carbide Endmill STD	2	3	6	38
CTMES03	3.0 Reg TiAlN Carbide Endmill STD	3	3	12	38
CTMES04	4.0 Reg TiAlN Carbide Endmill STD	4	4	14	50
CTMES05	5.0 Reg TiAlN Carbide Endmill STD	5	6	16	50
CTMES06	6.0 Reg TiAlN Carbide Endmill STD	6	6	19	50
CTMES08	8.0 Reg TiAlN Carbide Endmill STD	8	8	20	63
CTMES10	10.0 Reg TiAlN Carbide Endmill STD	10	10	22	75
CTMES12	12.0 Reg TiAlN Carbide Endmill STD	12	12	25	75
CTMES16	16.0 Reg TiAlN Carbide Endmill STD	16	16	32	89
CTMES20	20.0 Reg TiAlN Carbide Endmill STD	20	20	38	100

Carbide Endmills - Long

CUTTING TOOLS



- For long-reach finish milling applications
- Suitable for materials up to 1300 N/mm²
- TiAlN for longer tool life

Product Code	Description	Size mm	Shank Dia mm	Length of Cut	Overall Length
CTMEL03	3.0 Long TiAlN Carbide Endmill STD	3	3	19	60
CTMEL04	4.0 Long TiAlN Carbide Endmill STD	4	4	19	60
CTMEL05	5.0 Long TiAlN Carbide Endmill STD	5	5	19	60
CTMEL06	6.0 Long TiAlN Carbide Endmill STD	6	6	31	75
CTMEL08	8.0 Long TiAlN Carbide Endmill STD	8	8	31	75
CTMEL10	10.0 Long TiAlN Carbide Endmill STD	10	10	31	75
CTMEL12	12.0 Long TiAlN Carbide Endmill STD	12	12	50	100
CTMEL16	16.0 Long TiAlN Carbide Endmill STD	16	16	57	125
CTMEL20	20.0 Long TiAlN Carbide Endmill STD	20	20	57	125



- For profile & contour milling applications
- Suitable for materials up to 1600 N/mm²
- TiAlN for longer tool life

Product Code	Description	Size mm	Shank Dia mm	Length of Cut	Overall Length
CTBEM02	2.0 B/N Reg TiAlN Carbide Endmill STD	2	3	6	38
CTBEM03	3.0 B/N Reg TiAlN Carbide Endmill STD	3	3	12	38
CTBEM04	4.0 B/N Reg TiAlN Carbide Endmill STD	4	4	14	50
CTBEM05	5.0 B/N Reg TiAlN Carbide Endmill STD	5	6	16	50
CTBEM06	6.0 B/N Reg TiAlN Carbide Endmill STD	6	6	19	50
CTBEM08	8.0 B/N Reg TiAlN Carbide Endmill STD	8	8	20	63
CTBEM10	10.0 B/N Reg TiAlN Carbide Endmill STD	10	10	22	75
CTBEM12	12.0 B/N Reg TiAlN Carbide Endmill STD	12	12	25	75
CTBEM16	16.0 B/N Reg TiAlN Carbide Endmill STD	16	16	32	89
CTBEM20	20.0 B/N Reg TiAlN Carbide Endmill STD	20	20	38	100



- VHM - ULTRA grade of carbide for high performance
- For profile & contour milling in long reach applications
- Suitable for materials up to 1600 N/mm²
- AlCrN for longer tool life

Product Code	Description	Size mm	Shank Dia mm	Length of Cut	Overall Length
CTBEML03	3.0 B/N Long TiAlN Carbide Endmill STD	3	6	8	60
CTBEML04	4.0 B/N Long TiAlN Carbide Endmill STD	4	6	8	70
CTBEML05	5.0 B/N Long TiAlN Carbide Endmill STD	5	6	10	80
CTBEML06	6.0 B/N Long TiAlN Carbide Endmill STD	6	6	12	90
CTBEML08	8.0 B/N Long TiAlN Carbide Endmill STD	8	8	14	100
CTBEML10	10.0 B/N Long TiAlN Carbide Endmill STD	10	10	18	100
CTBEML12	12.0 B/N Long TiAlN Carbide Endmill STD	12	12	22	110
CTBEML16	16.0 B/N Long TiAlN Carbide Endmill STD	16	16	30	140
CTBEML20	20.0 B/N Long TiAlN Carbide Endmill STD	20	20	38	160



- For precision milling of slots & cavities
- Suitable for materials up to 1600 N/mm²
- TiAlN for longer tool life

Product Code	Description	Size mm	Shank Dia mm	Length of Cut	Overall Length
CTMSS03	3.0 Reg TiAlN Carbide Slot Drill STD	3	3	12	38
CTMSS04	4.0 Reg TiAlN Carbide Slot Drill STD	4	4	14	50
CTMSS05	5.0 Reg TiAlN Carbide Slot Drill STD	5	6	16	50
CTMSS06	6.0 Reg TiAlN Carbide Slot Drill STD	6	6	19	50
CTMSS08	8.0 Reg TiAlN Carbide Slot Drill STD	8	8	20	63
CTMSS10	10.0 Reg TiAlN Carbide Slot Drill STD	10	10	22	75
CTMSS12	12.0 Reg TiAlN Carbide Slot Drill STD	12	12	25	75
CTMSS16	16.0 Reg TiAlN Carbide Slot Drill STD	16	16	32	89
CTMSS20	20.0 Reg TiAlN Carbide Slot Drill STD	20	20	38	100



- For profile & contour milling applications
- Suitable for materials up to 1600 N/mm²
- TiAlN for longer tool life

Product Code	Description	Size mm	Shank Dia mm	Length of Cut	Overall Length
CTBSM02	2.0 B/N Reg TiAlN Carbide Slot Drill STD	2	3	6	38
CTBSM03	3.0 B/N Reg TiAlN Carbide Slot Drill STD	3	3	12	38
CTBSM04	4.0 B/N Reg TiAlN Carbide Slot Drill STD	4	4	14	50
CTBSM05	5.0 B/N Reg TiAlN Carbide Slot Drill STD	5	6	16	50
CTBSM06	6.0 B/N Reg TiAlN Carbide Slot Drill STD	6	6	19	50
CTBSM08	8.0 B/N Reg TiAlN Carbide Slot Drill STD	8	8	20	63
CTBSM10	10.0 B/N Reg TiAlN Carbide Slot Drill STD	10	10	22	75
CTBSM12	12.0 B/N Reg TiAlN Carbide Slot Drill STD	12	12	25	75
CTBSM16	16.0 B/N Reg TiAlN Carbide Slot Drill STD	16	16	32	89
CTBSM20	20.0 B/N Reg TiAlN Carbide Slot Drill STD	20	20	38	100

Carbide Endmill 3 Flute - Regular

CUTTING TOOLS



- For precision milling of slots & cavities
- Suitable for materials up to 1600 N/mm²
- For precision universal milling application
- TiAlN for longer tool life

Product Code	Description	Size mm	Shank Dia mm	Length of Cut	Overall Length
CTM3ER03	3.0 REG TiAlN Carbide 3 Flute Endmill	3	3	12	38
CTM3ER04	4.0 REG TiAlN Carbide 3 Flute Endmill	4	4	14	50
CTM3ER05	5.0 REG TiAlN Carbide 3 Flute Endmill	5	6	16	50
CTM3ER06	6.0 REG TiAlN Carbide 3 Flute Endmill	6	6	19	50
CTM3ER08	8.0 REG TiAlN Carbide 3 Flute Endmill	8	8	20	63
CTM3ER10	10.0 REG TiAlN Carbide 3 Flute Endmill	10	10	22	75
CTM3ER12	12.0 REG TiAlN Carbide 3 Flute Endmill	12	12	25	75



- For finish milling applications
- Suitable for materials up to 850 N/mm²
- For soft steels & non-ferrous material

Product Code	Description	Size mm	Shank Dia mm	Length of Cut	Overall Length
MER03	3mm Reg Endmill	3.0	6.0	10.0	54
MER04	4mm Reg Endmill	4.0	6.0	13.0	57
MER05	5mm Reg Endmill	5.0	6.0	16.0	60.5
MER06	6mm Reg Endmill	6.0	6.0	16.0	60.5
MER08	8mm Reg Endmill	8	10.0	18.0	63.5
MER10	10mm Reg Endmill	10	10.0	21.0	66.5
MER12	12mm Reg Endmill	12	12	24	70
MER14	14mm Reg Endmill	14	12	28.5	73
MER16	16mm Reg Endmill	16	16	26.5	77
MER20	20mm Reg Endmill	20	16	38	83.5
MER25	25mm Reg Endmill	25	25	44.5	101.5



- For finish milling applications
- Suitable for materials up to 850 N/mm²
- For soft steels & non-ferrous material

Product Code	Description	Size mm	Shank Dia mm	Length of Cut	Overall Length
MEL03	3mm Long Endmill	3.0	6.0	19.0	64
MEL04	4mm Long Endmill	4.0	6.0	26.0	70
MEL05	5mm Long Endmill	5.0	6.0	32.0	76
MEL06	6mm Long Endmill	6.0	6.0	32.0	76
MEL08	8mm Long Endmill	8	10.0	34.0	79.5
MEL10	10mm Long Endmill	10	10.0	37.0	82.5
MEL12	12mm Long Endmill	12	12	49.5	95
MEL16	16mm Long Endmill	16	16	58	108.5
MEL20	20mm Long Endmill	20	16	76	121.5



- For general milling of slot & cavities
- Suitable for materials up to 850 N/mm²
- For soft steels & non-ferrous material

Product Code	Description	Size mm	Shank Dia mm	Length of Cut	Overall Length
MSR02	2mm Reg Slot Drill	2.0	6.0	3.0	49
MSR03	3mm Reg Slot Drill	3.0	6.0	7.5	51
MSR04	4mm Reg Slot Drill	4.0	6.0	9.5	52.5
MSR05	5mm Reg Slot Drill	5.0	6.0	9.5	52.5
MSR06	6mm Reg Slot Drill	6.0	6.0	11.0	56.5
MSR08	8mm Reg Slot Drill	8	10.0	12.5	59.5
MSR10	10mm Reg Slot Drill	10	10.0	14.5	60.5
MSR12	12mm Reg Slot Drill	12	12	19	66.5
MSR14	14mm Reg Slot Drill	14	12	22	68.5
MSR16	16mm Reg Slot Drill	16	16	22	72
MSR20	20mm Reg Slot Drill	20	16	25.5	77
MSR25	25mm Reg Slot Drill	25	25	27	101

HSS Slot Drill - Long

CUTTING TOOLS



- For general milling of slot & cavities
- Suitable for materials up to 850 N/mm²
- For soft steels & non-ferrous material

Product Code	Description	Size mm	Shank Dia mm	Length of Cut	Overall Length
MSL03	3mm Long Slot Drill	3.0	6.0	11.0	60.5
MSL04	4mm Long Slot Drill	4.0	6.0	12.5	66.5
MSL05	5mm Long Slot Drill	5.0	6.0	12.5	70
MSL06	6mm Long Slot Drill	6.0	6.0	16.0	76
MSL08	8mm Long Slot Drill	8	10.0	19.0	79.5
MSL10	10mm Long Slot Drill	10	10.0	22.0	82.5
MSL12	12mm Long Slot Drill	12	12	25.5	95
MSL16	16mm Long Slot Drill	16	16	31.5	108
MSL20	20mm Long Slot Drill	20	16	38	120.5



- Various combinations available
- Designed for machine and hand held drilling

Product Code	Description	Range	Pieces	Case
DSET-SM2	Hales Drill 19pcs Set & Case	1.0 - 10.0mm x 0.5	19 pcs	ABS
DSET-SM3	Hales Drill 25pcs Set & Case	1.0 - 13.0mm x 0.5	25 pcs	ABS
DSET-SM99	Hales Drill Set 1-13 & Stand	1.0 - 10.0mm x 0.1 (+ 10.5, 10.9, 11.0, 11.5, 11.9, 12.0, 12.5, 12.9, 13.0mm)	100 pcs	Plastic



- General purpose drill
- Split point for easier penetration
- Web thinned point for easier penetration
- Designed for machine and hand held drilling

Product Code	Description	Size mm	Length of Cut	Overall Length
JDM0035	0.35mm Jobber Drill	0.35	4	19
JDM0040	0.40mm Jobber Drill	0.40	5	20
JDM0045	0.45mm Jobber Drill	0.45	5	20
JDM0050	0.50mm Jobber Drill	0.50	6	22
JDM0055	0.55mm Jobber Drill	0.55	7	24
JDM0060	0.60mm Jobber Drill	0.60	7	24
JDM0065	0.65mm Jobber Drill	0.65	7	24
JDM0070	0.70mm Jobber Drill	0.70	8	24
JDM0075	0.75mm Jobber Drill	0.75	9	28
JDM0080	0.80mm Jobber Drill	0.80	9	30
JDM0090	0.90mm Jobber Drill	0.90	10	32
JDM010	1.00mm Jobber Drill	1.00	10	34
JDM0105	1.05mm Jobber Drill	1.05	11	34
JDM011	1.10mm Jobber Drill	1.10	11	36
JDM0115	1.15mm Jobber Drill	1.15	12	36
JDM012	1.20mm Jobber Drill	1.20	12	38
JDM0125	1.25mm Jobber Drill	1.25	14	38
JDM013	1.30mm Jobber Drill	1.30	14	38
JDM0135	1.35mm Jobber Drill	1.35	16	38
JDM014	1.40mm Jobber Drill	1.40	16	40
JDM0145	1.45mm Jobber Drill	1.45	16	40
JDM015	1.50mm Jobber Drill	1.50	16	40
JDM0155	1.55mm Jobber Drill	1.55	18	40



- General purpose drill
- Web thinned point for easier penetration
- Split point for easier penetration
- Designed for machine and hand held drilling

Product Code	Description	Size mm	Length of Cut	Overall Length
JDM016	1.60mm Jobber Drill	1.60	18	43
JDM0165	1.65mm Jobber Drill	1.65	18	43
JDM017	1.70mm Jobber Drill	1.70	18	43
JDM0175	1.75mm Jobber Drill	1.75	20	43
JDM018	1.80mm Jobber Drill	1.80	20	46
JDM0185	1.85mm Jobber Drill	1.85	20	46
JDM019	1.90mm Jobber Drill	1.90	20	46
JDM0195	1.95mm Jobber Drill	1.95	22	46
JDM020	2.00mm Jobber Drill	2.00	24	49
JDM0205	2.05mm Jobber Drill	2.05	24	49
JDM021	2.10mm Jobber Drill	2.10	24	49
JDM0215	2.15mm Jobber Drill	2.15	24	49
JDM022	2.20mm Jobber Drill	2.20	27	53
JDM0225	2.25mm Jobber Drill	2.25	27	53
JDM023	2.30mm Jobber Drill	2.30	27	53
JDM0235	2.35mm Jobber Drill	2.35	27	53
JDM024	2.40mm Jobber Drill	2.40	30	57
JDM0245	2.45mm Jobber Drill	2.45	30	57
JDM025	2.50mm Jobber Drill	2.50	30	57
JDM0255	2.55mm Jobber Drill	2.55	30	57
JDM026	2.60mm Jobber Drill	2.60	30	57
JDM0265	2.65mm Jobber Drill	2.65	30	57
JDM027	2.70mm Jobber Drill	2.70	33	61
JDM0275	2.75mm Jobber Drill	2.75	33	61
JDM028	2.80mm Jobber Drill	2.80	33	61
JDM0285	2.85mm Jobber Drill	2.85	33	61
JDM029	2.90mm Jobber Drill	2.90	33	61
JDM0295	2.95mm Jobber Drill	2.95	33	61
JDM030	3.00mm Jobber Drill	3.00	33	61
JDM031	3.10mm Jobber Drill	3.10	36	61
JDM032	3.20mm Jobber Drill	3.20	36	65
JDM033	3.30mm Jobber Drill	3.30	36	65
JDM034	3.40mm Jobber Drill	3.40	39	70
JDM035	3.50mm Jobber Drill	3.50	39	70
JDM036	3.60mm Jobber Drill	3.60	39	70
JDM037	3.70mm Jobber Drill	3.70	39	70
JDM038	3.80mm Jobber Drill	3.80	43	75
JDM039	3.90mm Jobber Drill	3.90	43	75
JDM040	4.00mm Jobber Drill	4.00	43	75
JDM041	4.10mm Jobber Drill	4.10	43	75
JDM042	4.20mm Jobber Drill	4.20	43	75
JDM043	4.30mm Jobber Drill	4.30	47	80



- General purpose drill
- Web thinned point for easier penetration
- Split point for easier penetration
- Designed for machine and hand held drilling

Product Code	Description	Size mm	Length of Cut	Overall Length
JDM044	4.40mm Jobber Drill	4.40	47	80
JDM045	4.50mm Jobber Drill	4.50	47	80
JDM046	4.60mm Jobber Drill	4.60	47	80
JDM047	4.70mm Jobber Drill	4.70	47	80
JDM048	4.80mm Jobber Drill	4.80	47	86
JDM049	4.90mm Jobber Drill	4.90	52	86
JDM050	5.00mm Jobber Drill	5.00	52	86
JDM051	5.10mm Jobber Drill	5.10	52	86
JDM052	5.20mm Jobber Drill	5.20	52	86
JDM053	5.30mm Jobber Drill	5.30	52	86
JDM054	5.40mm Jobber Drill	5.40	57	93
JDM055	5.50mm Jobber Drill	5.50	57	93
JDM056	5.60mm Jobber Drill	5.60	57	93
JDM057	5.70mm Jobber Drill	5.70	57	93
JDM058	5.80mm Jobber Drill	5.80	57	93
JDM059	5.90mm Jobber Drill	5.90	57	93
JDM060	6.00mm Jobber Drill	6.00	57	93
JDM061	6.10mm Jobber Drill	6.10	63	101
JDM062	6.20mm Jobber Drill	6.20	63	101
JDM063	6.30mm Jobber Drill	6.30	63	101
JDM064	6.40mm Jobber Drill	6.40	63	101
JDM065	6.50mm Jobber Drill	6.50	63	101
JDM066	6.60mm Jobber Drill	6.60	63	101
JDM067	6.70mm Jobber Drill	6.70	63	101
JDM068	6.80mm Jobber Drill	6.80	69	109
JDM069	6.90mm Jobber Drill	6.90	69	109
JDM070	7.00mm Jobber Drill	7.00	69	109
JDM071	7.10mm Jobber Drill	7.10	69	109
JDM072	7.20mm Jobber Drill	7.20	69	109
JDM073	7.30mm Jobber Drill	7.30	69	109
JDM074	7.40mm Jobber Drill	7.40	69	109
JDM075	7.50mm Jobber Drill	7.50	69	109
JDM076	7.60mm Jobber Drill	7.60	75	117
JDM077	7.70mm Jobber Drill	7.70	75	117
JDM078	7.80mm Jobber Drill	7.80	75	117
JDM079	7.90mm Jobber Drill	7.90	75	117
JDM080	8.00mm Jobber Drill	8.00	75	117
JDM081	8.10mm Jobber Drill	8.10	75	117
JDM082	8.20mm Jobber Drill	8.20	75	117
JDM083	8.30mm Jobber Drill	8.30	75	117
JDM084	8.40mm Jobber Drill	8.40	75	117
JDM085	8.50mm Jobber Drill	8.50	75	117
JDM086	8.60mm Jobber Drill	8.60	81	125
JDM087	8.70mm Jobber Drill	8.70	81	125
JDM088	8.80mm Jobber Drill	8.80	81	125



- General purpose drill
- Web thinned point for easier penetration
- Split point for easier penetration
- Designed for machine and hand held drilling

Product Code	Description	Size mm	Length of Cut	Overall Length
JDM089	8.90mm Jobber Drill	8.90	81	125
JDM090	9.00mm Jobber Drill	9.00	81	125
JDM091	9.10mm Jobber Drill	9.10	81	125
JDM092	9.20mm Jobber Drill	9.20	81	125
JDM093	9.30mm Jobber Drill	9.30	81	125
JDM094	9.40mm Jobber Drill	9.40	81	125
JDM095	9.50mm Jobber Drill	9.50	81	125
JDM096	9.60mm Jobber Drill	9.60	87	133
JDM097	9.70mm Jobber Drill	9.70	87	133
JDM098	9.80mm Jobber Drill	9.80	87	133
JDM099	9.90mm Jobber Drill	9.90	87	133
JDM100	10.00mm Jobber Drill	10.00	87	133
JDM101	10.10mm Jobber Drill	10.10	87	133
JDM102	10.20mm Jobber Drill	10.20	87	133
JDM103	10.30mm Jobber Drill	10.30	87	133
JDM104	10.40mm Jobber Drill	10.40	87	133
JDM105	10.50mm Jobber Drill	10.50	87	133
JDM106	10.60mm Jobber Drill	10.60	87	133
JDM107	10.70mm Jobber Drill	10.70	94	142
JDM108	10.80mm Jobber Drill	10.80	94	142
JDM109	10.90mm Jobber Drill	10.90	94	142
JDM110	11.00mm Jobber Drill	11.00	94	142
JDM111	11.10mm Jobber Drill	11.10	94	142
JDM112	11.20mm Jobber Drill	11.20	94	142
JDM113	11.30mm Jobber Drill	11.30	94	142
JDM114	11.40mm Jobber Drill	11.40	94	142
JDM115	11.50mm Jobber Drill	11.50	94	142
JDM116	11.60mm Jobber Drill	11.60	94	142
JDM117	11.70mm Jobber Drill	11.70	94	142
JDM118	11.80mm Jobber Drill	11.80	94	142
JDM119	11.90mm Jobber Drill	11.90	94	142
JDM120	12.00mm Jobber Drill	12.00	101	151
JDM121	12.10mm Jobber Drill	12.10	101	151
JDM122	12.20mm Jobber Drill	12.20	101	151
JDM123	12.30mm Jobber Drill	12.30	101	151
JDM124	12.40mm Jobber Drill	12.40	101	151
JDM125	12.50mm Jobber Drill	12.50	101	151
JDM126	12.60mm Jobber Drill	12.60	101	151
JDM127	12.70mm Jobber Drill	12.70	101	151
JDM128	12.80mm Jobber Drill	12.80	101	151
JDM129	12.90mm Jobber Drill	12.90	101	151
JDM130	13.00mm Jobber Drill	13.00	101	151



- General purpose drill
- Web thinned point for easier penetration
- Split point for easier penetration
- Designed for machine and hand held drilling

Product Code	Description	Size mm	Length of Cut	Overall Length
JD02	1/32 Jobber Drill	1/32	13	35
JD03	3/64 Jobber Drill	3/64	19	44
JD04	1/16 Jobber Drill	1/16	22	48
JD05	5/64 Jobber Drill	5/64	25	51
JD06	3/32 Jobber Drill	3/32	32	57
JD07	7/64 Jobber Drill	7/64	38	67
JD08	1/8 Jobber Drill	1/8	41	70
JD09	9/64 Jobber Drill	9/64	44	73
JD10	5/32 Jobber Drill	5/32	51	79
JD11	11/64 Jobber Drill	11/64	54	83
JD12	3/16 Jobber Drill	3/16	59	89
JD13	13/64 Jobber Drill	13/64	62	92
JD14	7/32 Jobber Drill	7/32	64	95
JD15	15/64 Jobber Drill	15/64	67	98
JD16	1/4 Jobber Drill	1/4	70	102
JD17	17/64 Jobber Drill	17/64	73	105
JD18	9/32 Jobber Drill	9/32	75	108
JD19	19/64 Jobber Drill	19/64	78	111
JD20	5/16 Jobber Drill	5/16	81	114
JD21	21/64 Jobber Drill	21/64	84	117
JD22	11/32 Jobber Drill	11/32	87	121
JD23	23/64 Jobber Drill	23/64	89	124
JD24	3/8 Jobber Drill	3/8	92	127
JD25	25/64 Jobber Drill	25/64	95	130
JD26	13/32 Jobber Drill	13/32	98	133
JD27	27/64 Jobber Drill	27/64	100	137
JD28	7/16 Jobber Drill	7/16	103	140
JD29	29/64 Jobber Drill	29/64	106	143
JD30	15/32 Jobber Drill	15/32	110	146
JD31	31/64 Jobber Drill	31/64	111	149
JD32	1/2 Jobber Drill	1/2	114	152



- General purpose drill
- Ideal for long reach type applications
- For deep hole applications, pecking is recommended
- Recommended for controlled machine drilling only

Product Code	Description	Size mm	Length of Cut	Overall Length
LDM020	2mm L.S Drill	2.00	57	108
LDM025	2.5mm L.S Drill	2.50	64	117
LDM03	3mm L.S Drill	3.00	70	130
LDM035	3.5mm L.S Drill	3.50	76	137
LDM04	4mm L.S Drill	4.0	86	146
LDM045	4.5mm L.S Drill	4.5	86	146
LDM05	5mm L.S Drill	5.0	92	152
LDM055	5.5mm L.S Drill	5.5	92	152
LDM06	6mm L.S Drill	6.0	95	156
LDM065	6.5mm L.S Drill	6.5	98	159
LDM07	7mm L.S Drill	7.0	98	159
LDM075	7.5mm L.S Drill	7.5	102	162
LDM08	8mm L.S Drill	8.0	105	165
LDM085	8.5mm L.S Drill	8.5	105	165
LDM09	9mm L.S Drill	9.0	108	171
LDM095	9.5mm L.S Drill	9.5	108	171
LDM10	10mm L.S Drill	10.0	111	178
LDM105	10.5mm L.S Drill	10.5	117	184
LDM11	11mm L.S Drill	11.0	117	184
LDM115	11.5mm L.S Drill	11.5	117	184
LDM12	12mm L.S Drill	12.0	121	197
LDM125	12.5mm L.S Drill	12.5	121	197
LDM13	13.0mm L.S Drill	13.0	121	203



- Extended Length
- Featuring parabolic deep-hole flute design with extra length

Product Code	Description	Size mm	Length of Cut	Overall Length
DM02125	2mm Deep Hole Drill #1	2.0	90	125
DM03150	3mm Deep Hole Drill #1	3.0	100	150
DM035165	3.5mm Deep Hole Drill #1	3.5	115	165
DM04175	4mm Deep Hole Drill #1	4.0	120	175
DM045185	4.5mm Deep Hole Drill #1	4.5	125	185
DM05195	5mm Deep Hole Drill #1	5.0	135	195
DM055205	5.5mm Deep Hole Drill #1	5.5	140	205
DM06205	6mm Deep Hole Drill #1	6.0	140	205
DM065215	6.5mm Deep Hole Drill #1	6.5	150	215
DM07225	7mm Deep Hole Drill #1	7.0	155	225
DM075225	7.5mm Deep Hole Drill #1	7.5	155	225
DM08240	8mm Deep Hole Drill #1	8.0	165	240
DM085240	8.5mm Deep Hole Drill #1	8.5	165	240
DM09250	9mm Deep Hole Drill #1	9.0	175	250
DM095250	9.5mm Deep Hole Drill #1	9.5	175	250
DM10265	10mm Deep Hole Drill #1	10.0	185	265



- Extended Length
- Featuring parabolic deep-hole flute design with extra length

Product Code	Description	Size mm	Length of Cut	Overall Length
DM02160	2mm Deep Hole Drill #2	2.0	110	160
DM03190	3mm Deep Hole Drill #2	3.0	130	190
DM035210	3.5mm Deep Hole Drill #2	3.5	145	210
DM04220	4mm Deep Hole Drill #2	4.0	150	220
DM045235	4.5mm Deep Hole Drill #2	4.5	160	235
DM05245	5mm Deep Hole Drill #2	5.0	170	245
DM055260	5.5mm Deep Hole Drill #2	5.5	180	260
DM06260	6mm Deep Hole Drill #2	6.0	180	260
DM065275	6.5mm Deep Hole Drill #2	6.5	190	275
DM07290	7mm Deep Hole Drill #2	7.0	200	290
DM075290	7.5mm Deep Hole Drill #2	7.5	200	290
DM08305	8mm Deep Hole Drill #2	8.0	210	305
DM085305	8.5mm Deep Hole Drill #2	8.5	210	305
DM09320	9mm Deep Hole Drill #2	9.0	220	320
DM095340	9.5mm Deep Hole Drill #2	9.5	235	340
DM10340	10mm Deep Hole Drill #2	10.0	235	340



- Extended Length
- Featuring parabolic deep-hole flute design with extra length

Product Code	Description	Size mm	Length of Cut	Overall Length
DM025225	2.5mm Deep Hole Drill #3	2.5	150	225
DM03240	3mm Deep Hole Drill #3	3.0	160	240
DM035265	3.5mm Deep Hole Drill #3	3.5	180	265
DM04280	4mm Deep Hole Drill #3	4.0	190	280
DM045295	4.5mm Deep Hole Drill #3	4.5	200	295
DM05315	5mm Deep Hole Drill #3	5.0	210	315
DM055330	5.5mm Deep Hole Drill #3	5.5	225	330
DM06330	6mm Deep Hole Drill #3	6.0	225	330
DM065350	6.5mm Deep Hole Drill #3	6.5	235	350
DM07370	7mm Deep Hole Drill #3	7.0	250	370
DM075370	7.5mm Deep Hole Drill #3	7.5	250	370
DM08390	8mm Deep Hole Drill #3	8.0	265	390
DM085390	8.5mm Deep Hole Drill #3	8.5	265	390
DM09410	9mm Deep Hole Drill #3	9.0	280	410
DM095430	9.5mm Deep Hole Drill #3	9.5	295	430
DM10430	10mm Deep Hole Drill #3	10.0	295	430

Gun Drills & Gun Drill Drivers

CUTTING TOOLS



Product Code	Diameter mm	Overall Length
GD03250	3	250
GD04250	4	250
GD05250	5	250
GD06250	6	250
GD06550	6	550
GD08250	8	250
GD08550	8	550
GD10300	10	300
GD10550	10	550
GD12300	12	300
GD12550	12	550
GD15300	15	300
GD15550	15	550
GD16300	16	300
GD16550	16	550

Product Code	No. Morse Taper
VT516/2	No 1
VT516/2	No 2
VT516/3	No 3
VT516/4	No 4



- General purpose drill
- Suitable for materials up to 900 N/mm²

Product Code	Description	Dia mm.	Overall Length
TSDM12	12 Taper Shank Drill	12.0	182
TSDM125	12.5 Taper Shank Drill	12.5	182
TSDM13	13 Taper Shank Drill	13.0	182
TSDM135	13.5 Taper Shank Drill	13.5	189
TSDM14	14 Taper Shank Drill	14.0	189
TSDM145	14.5 Taper Shank Drill	14.5	212
TSDM15	15 Taper Shank Drill	15.0	212
TSDM155	15.5 Taper Shank Drill	15.5	218
TSDM16	16 Taper Shank Drill	16.0	218
TSDM165	16.5 Taper Shank Drill	16.5	223
TSDM17	17 Taper Shank Drill	17.0	223
TSDM175	17.5 Taper Shank Drill	17.5	228
TSDM18	18 Taper Shank Drill	18.0	228
TSDM185	18.5 Taper Shank Drill	18.5	233
TSDM19	19 Taper Shank Drill	19.0	233
TSDM195	19.5 Taper Shank Drill	19.5	238
TSDM20	20 Taper Shank Drill	20.0	238
TSDM205	20.5 Taper Shank Drill	20.5	243
TSDM 21	21 Taper Shank Drill	21.0	243
TSDM 215	21.5 Taper Shank Drill	21.5	248
TSDM 22	22 Taper Shank Drill	22.0	248
TSDM 225	22.5 Taper Shank Drill	22.5	253
TSDM 23	23 Taper Shank Drill	23.0	253
TSDM 235	23.5 Taper Shank Drill	23.5	276
TSDM 24	24 Taper Shank Drill	24.0	281
TSDM 245	24.5 Taper Shank Drill	24.5	281
TSDM 25	25 Taper Shank Drill	25.0	281
TSDM 255	25.5 Taper Shank Drill	25.5	286
TSDM 26	26 Taper Shank Drill	26.0	286
TSDM 265	26.5 Taper Shank Drill	26.5	286
TSDM 27	27 Taper Shank Drill	27.0	291
TSDM 275	27.5 Taper Shank Drill	27.5	291
TSDM 28	28 Taper Shank Drill	28.0	291
TSDM 285	28.5 Taper Shank Drill	28.5	296
TSDM 29	29 Taper Shank Drill	29.0	296
TSDM 295	29.5 Taper Shank Drill	29.5	296
TSDM 30	30 Taper Shank Drill	30.0	296
TSDM 305	30.5 Taper Shank Drill	30.5	301
TSDM 31	31 Taper Shank Drill	31.0	301
TSDM 315	31.5 Taper Shank Drill	31.5	301



- General purpose drill
- Suitable for materials up to 900 N/mm²

Product Code	Description	Dia mm.	Overall Length
TSDM 32	32 Taper Shank Drill	32.0	334
TSDM 325	32.5 Taper Shank Drill	32.5	334
TSDM 33	33 Taper Shank Drill	33.0	334
TSDM 335	33.5 Taper Shank Drill	33.5	334
TSDM 34	34 Taper Shank Drill	34.0	339
TSDM 345	34.5 Taper Shank Drill	34.5	339
TSDM 35	35 Taper Shank Drill	35.0	339
TSDM 355	35.5 Taper Shank Drill	35.5	339
TSDM 36	36 Taper Shank Drill	36.0	344
TSDM 365	36.5 Taper Shank Drill	36.5	344
TSDM 37	37 Taper Shank Drill	37.0	344
TSDM 375	37.5 Taper Shank Drill	37.5	344
TSDM 38	38 Taper Shank Drill	38.0	349
TSDM 385	38.5 Taper Shank Drill	38.5	349
TSDM 39	39 Taper Shank Drill	39.0	349
TSDM 395	39.5 Taper Shank Drill	39.5	349
TSDM 40	40 Taper Shank Drill	40.0	349
TSDM 405	40.5 Taper Shank Drill	40.5	354
TSDM 41	41 Taper Shank Drill	41.0	354
TSDM 415	41.5 Taper Shank Drill	41.5	354
TSDM 42	42 Taper Shank Drill	42.0	354
TSDM 425	42.5 Taper Shank Drill	42.5	354
TSDM 43	43 Taper Shank Drill	43.0	359
TSDM 435	43.5 Taper Shank Drill	43.5	359
TSDM 44	44 Taper Shank Drill	44.0	359
TSDM 445	44.5 Taper Shank Drill	44.5	359
TSDM 45	45 Taper Shank Drill	45.0	359
TSDM 455	45.5 Taper Shank Drill	45.5	364
TSDM 46	46 Taper Shank Drill	46.0	364
TSDM 465	46.5 Taper Shank Drill	46.5	364
TSDM 47	47 Taper Shank Drill	47.0	364
TSDM 475	47.5 Taper Shank Drill	47.5	364
TSDM 48	48 Taper Shank Drill	48.0	369
TSDM 485	48.5 Taper Shank Drill	48.5	369
TSDM 49	49 Taper Shank Drill	49.0	369
TSDM 495	49.5 Taper Shank Drill	49.5	369
TSDM 50	50 Taper Shank Drill	50.0	369
TSDM 505	50.5 Taper Shank Drill	50.5	374



- Morse Taper Sleeve
- Hardened alloy steel
- Precision ground internally and externally
- Drift Drill key - to eject Morse Taper drills from sleeves, sockets and machine spindles

Product Code	Description	MT(internal)	MT(external)	Overall Length
MTS12	1-2 Morse Taper Sleeve	1	2	92
MTS23	2-3 Morse Taper Sleeve	2	3	112
MTS34	3-4 Morse Taper Sleeve	3	4	140
MTS45	4-5 Morse Taper Sleeve	4	5	171
MTD1	MT1 & 2 Hales Drift	MT #1 & #2		
MTD3	MT3 Hales Drift	MT #3		
MTD4	MT4 Hales Drift	MT #4		
MTD5	MT5 & 6 Hales Drift	MT #5 & #6		



- Tradesman quality ideal for use in natural and artificial stone, masonry, brickwork & concrete.

Product Code	Description	Plug Colour	Dia. mm	Overall Length
MDMS03	3 X 60 Masonry Drill	Yellow	3	60
MDMS04	4 X 75 Masonry Drill		4	75
MDMS05	5 X 85 Masonry Drill	White	5	85
MDMS055	5.5 X 85 Masonry Drill	Red	5.5	95
MDMS06	6 X 100 Masonry Drill		6	100
MDMS065	6.5 X100 Masonry Drill	Green	6.5	100
MDMS07	7 X100 Masonry Drill		7	100
MDMS08	8 X120 Masonry Drill	Blue	8	120
MDMS09	9 X120 Masonry Drill		9	120
MDMS10	10 X120 Masonry Drill	Orange	10	120



- Tradesman quality ideal for use in natural and artificial stone, masonry, brickwork & concrete

Product Code	Description	Plug Colour	Dia. mm	Overall Length
MDML05	5 X150 Masonry Drill	White	5	150
MDML055	5.5 X150 Masonry Drill	Red	5.5	150
MDML06	6 X 150 Masonry Drill		6	150
MDML065	6.5 X150 Masonry Drill	Green	6.5	150
MDML07	7 X150 Masonry Drill		7	150
MDML08	8 X150 Masonry Drill	Blue	8	150
MDML10	10 X150 Masonry Drill	Orange	10	150
MDML11	11 X150 Masonry Drill	Grey	11	150
MDML12	12 X150 Masonry Drill		12	150
MDML13	13 X150 Masonry Drill		13	150
MDML14	14 X150 Masonry Drill		14	150
MDML16	16 X150 Masonry Drill	Black	16	150
MDML20	20 X160 Masonry Drill		20	160
MDML22	22 X160 Masonry Drill		22	160
MDML25	25 X160 Masonry Drill		25	160



- Precision drill for machine use
- Rigid design for "seat" position accuracy
- 90° offers hold chamfering and spotting with the one tool
- 120° also available

Product Code	Description	Dia mm.	Overall Length
TMSD06	6.0 Tinite Spot/Drill	6.0	66
TMSD08	8.0 Tinite Spot/Drill	8.0	79
TMSD10	10.0 Tinite Spot/Drill	10.0	89
TMSD12	12.0 Tinite Spot/Drill	12.0	102
TMSD16	16.0 Tinite Spot/Drill	16.0	115
TMSD20	20.0 Tinite Spot/Drill	20.0	131



- For drilling 60° centre holes in the end of shafts
- Ensures accurate starting and centering for precision

Product Code	Description	Shank mm	Tip Dia. mm	Overall Length
CD1	No.1 Centre Drill	1/8	3/64	1-1/4
CD2	No.2 Centre Drill	3/16	5/64	1-7/8
CD3	No.3 Centre Drill	1/4	7/64	2
CD4	No.4 Centre Drill	5/16	1/8	2-1/8
CD5	No.5 Centre Drill	7/16	3/16	2-3/4
CD6	No.6 Centre Drill	1/2	7/32	3
CD7	No.7 Centre Drill	5/8	1/4	3-1/4



- Long Series
- Straight Shank

Product Code	Size (Metric)	Flute Length	Overall Length
MRM015	1.5	12	62
MRM025	2.5	21	87
MRM03	3.0	21	87
MRM035	3.5	25	100
MRM04	4.0	32	110
MRM045	4.5	32	112
MRM05	5.0	32	125
MRM055	5.5	32	125
MRM06	6.0	38	150
MRM065	6.5	38	150
MRM07	7.0	38	150
MRM08	8.0	38	150

Product Code	Size (Metric)	Flute Length	Overall Length
MRM09	9.0	45	180
MRM10	10.0	45	180
MRM11	11.0	45	180
MRM12	12.0	50	200
MRM13	13.0	50	200
MRM14	14.0	50	200
MRM15	15.0	50	200
MRM16	16.0	55	230
MRM18	18.0	55	230
MRM20	20.0	65	240
MRM25	25.0	70	265

HSS Chucking Reamer - Imperial

CUTTING TOOLS



- Long Series
- Straight Shank

Product Code	Size (Imperial)	Flute Length	Overall Length
MR04	1/16	1/2	2 1/2
MR05	5/64	7/8	3
MR06	3/32	3/4	3
MR07	7/64	7/8	3 1/2
MR08	1/8	7/8	3 1/2
MR10	5/32	1	4
MR11	11/64	1 1/8	4 1/2
MR12	3/16	1 1/8	4 1/2
MR13	13/64	1 1/4	5
MR14	7/32	1 1/4	5
MR16	1/4	1 1/2	6

Product Code	Size (Imperial)	Flute Length	Overall Length
MR17	17/64	1 1/2	6
MR18	9/32	1 1/2	6
MR20	5/16	1 1/2	6
MR24	3/8	1 3/4	7
MR28	7/16	1 3/4	7
MR32	1/2	2	8
MR40	5/8	2	9
MR48	3/4	2 1/2	9 1/2
MR56	7/8	2 1/2	9 1/2
MR64	1	2 3/4	10 1/2



- Countersinking tool
- For use in portable drills or drilling machines
- For use on most materials including plastics, non-ferrous & ferrous metals
- Material HSS

Product Code	Description	Size mm	Shank Dia mm	Overall Length
CSK063	6.3mm Hales Countersink	6.3	5.0	45
CSK08	8.0mm Hales Countersink	8.0	6.0	50
CSK10	10.0mm Hales Countersink	10.0	6.0	50
CSK124	12.4mm Hales Countersink	12.4	8.0	56
CSK15	15.0mm Hales Countersink	15.0	10.0	60
CSK165	16.5mm Hales Countersink	16.5	10.0	60
CSK205	20.5mm Hales Countersink	20.5	10.0	63
CSK25	25.0mm Hales Countersink	25.0	10.0	67
CSK31	31.0mm Hales Countersink	31.0	12.0	71



6 Piece Hales Countersink Set in Metal Case

Product Code	Size mm
CSK-SET	6.3
	8.3
	10.4
	12.4
	16.5
	20.5



- Solid pilot style
- 3 flute design
- Right-hand cutting
- Nominal size to suit metric socket head cap screws
- Material HSS

Product Code	Description	Size mm	Shank Dia mm	Overall Length
HCB03	M3 Hales Counterbore	6.0	5.0	71
HCB04	M4 Hales Counterbore	8.0	5.0	71
HCB05	M5 Hales Counterbore	10.0	8.0	80
HCB06	M6 Hales Counterbore	11.0	8.0	80
HCB08	M8 Hales Counterbore	15.0	12.5	100
HCB10	M10 Hales Counterbore	18.0	12.5	100
HCB12	M12 Hales Counterbore	20.0	12.5	100
HCB16	M16 Hales Counterbore (Taper Shank)	26.0	MT3	192

Counter Bore Set

CUTTING TOOLS



7 Piece Hales Countebore Set in Metal Case

Product Code	Size mm
HCB-SET	M3
	M4
	M5
	M6
	M8
	M10
	M12

TAPER

INTERMEDIATE

BOTTOMING



- General purpose use
- Suitable for materials up to 1000 N/mm²
- Through & blind holes
- Suitable for both hand and machine operations
- Material: HSS
- Depths up to approx. 1 x d₁

Product Code	Size	Type	Pitch	Shank Dia.	Overall Length	Drill Dia.
TM021	M2	TAPER	0.4	2.50	41	1.60
TM022	M2	INTERMEDIATE	0.4	2.50	41	1.60
TM023	M2	BOTTOMING	0.4	2.50	41	1.60
TM0251	M2.5	TAPER	0.45	2.80	45	2.05
TM0252	M2.5	INTERMEDIATE	0.45	2.80	45	2.05
TM0253	M2.5	BOTTOMING	0.45	2.80	45	2.05
TM031	M3	TAPER	0.5	3.15	48	2.50
TM032	M3	INTERMEDIATE	0.5	3.15	48	2.50
TM033	M3	BOTTOMING	0.5	3.15	48	2.50
TM041	M4	TAPER	0.7	4.00	53	3.30
TM042	M4	INTERMEDIATE	0.7	4.00	53	3.30
TM043	M4	BOTTOMING	0.7	4.00	53	3.30
TM051	M5	TAPER	0.8	5.00	58	4.20
TM052	M5	INTERMEDIATE	0.8	5.00	58	4.20
TM053	M5	BOTTOMING	0.8	5.00	58	4.20
TM061	M6	TAPER	1.0	6.30	66	5.00
TM062	M6	INTERMEDIATE	1.0	6.30	66	5.00
TM063	M6	BOTTOMING	1.0	6.30	66	5.00
TM081	M8	TAPER	1.25	8.00	72	6.80
TM082	M8	INTERMEDIATE	1.25	8.00	72	6.80
TM083	M8	BOTTOMING	1.25	8.00	72	6.80
TM101	M10	TAPER	1.5	10.00	80	8.50
TM102	M10	INTERMEDIATE	1.5	10.00	80	8.50
TM103	M10	BOTTOMING	1.5	10.00	80	8.50
TM121	M12	TAPER	1.75	9.00	89	10.20
TM122	M12	INTERMEDIATE	1.75	9.00	89	10.20
TM123	M12	BOTTOMING	1.75	9.00	89	10.20
TM141	M14	TAPER	2.0	11.20	95	12.00
TM142	M14	INTERMEDIATE	2.0	11.20	95	12.00
TM143	M14	BOTTOMING	2.0	11.20	95	12.00
TM161	M16	TAPER	2.0	12.50	102	14.00
TM162	M16	INTERMEDIATE	2.0	12.50	102	14.00
TM163	M16	BOTTOMING	2.0	12.50	102	14.00
TM181	M18	TAPER	2.5	14.00	112	15.50
TM182	M18	INTERMEDIATE	2.5	14.00	112	15.50
TM183	M18	BOTTOMING	2.5	14.00	112	15.50
TM201	M20	TAPER	2.5	14.00	112	17.50
TM202	M20	INTERMEDIATE	2.5	14.00	112	17.50
TM203	M20	BOTTOMING	2.5	14.00	112	17.50
TM241	M24	TAPER	3.0	18.00	130	21.00
TM242	M24	INTERMEDIATE	3.0	18.00	130	21.00
TM243	M24	BOTTOMING	3.0	18.00	130	21.00

TAPER

INTERMEDIATE

BOTTOMING



- General purpose use
- Suitable for materials up to 1000 N/mm²
- Through & blind holes
- Suitable for both hand and machine operations
- Material: HSS
- Depths up to approx. 1 x d_t

Product Code	Size	Type	Pitch	Shank Dia.	Overall Length	Drill Dia.
TW081	1/8	TAPER	40	3.15	48	2.55
TW082	1/8	INTERMEDIATE	40	3.15	48	2.55
TW083	1/8	BOTTOMING	40	3.15	48	2.55
TW121	3/16	TAPER	24	5.00	58	3.70
TW122	3/16	INTERMEDIATE	24	5.00	58	3.70
TW123	3/16	BOTTOMING	24	5.00	58	3.70
TW141	7/32	TAPER	24(WHIT)	5.60	62	4.50
TW142	7/32	INTERMEDIATE	24(WHIT)	5.60	62	4.50
TW143	7/32	BOTTOMING	24(WHIT)	5.60	62	4.50
TW161	1/4	TAPER	20	6.30	66	5.10
TW162	1/4	INTERMEDIATE	20	6.30	66	5.10
TW163	1/4	BOTTOMING	20	6.30	66	5.10
TW201	5/16	TAPER	18	8.00	72	6.50
TW202	5/16	INTERMEDIATE	18	8.00	72	6.50
TW203	5/16	BOTTOMING	18	8.00	72	6.50
TW241	3/8	TAPER	16	10.00	80	7.90
TW242	3/8	INTERMEDIATE	16	10.00	80	7.90
TW243	3/8	BOTTOMING	16	10.00	80	7.90
TW281	7/16	TAPER	14	8.00	85	9.30
TW282	7/16	INTERMEDIATE	14	8.00	85	9.30
TW283	7/16	BOTTOMING	14	8.00	85	9.30
TW321	1/2	TAPER	12	9.00	89	10.50
TW322	1/2	INTERMEDIATE	12	9.00	89	10.50
TW323	1/2	BOTTOMING	12	9.00	89	10.50
TW361	9/16	TAPER	12	11.20	95	12.10
TW362	9/16	INTERMEDIATE	12	11.20	95	12.10
TW363	9/16	BOTTOMING	12	11.20	95	12.10
TW401	5/8	TAPER	11	12.50	102	13.50
TW402	5/8	INTERMEDIATE	11	12.50	102	13.50
TW403	5/8	BOTTOMING	11	12.50	102	13.50
TW481	3/4	TAPER	10	14.00	112	16.25
TW482	3/4	INTERMEDIATE	10	14.00	112	16.25
TW483	3/4	BOTTOMING	10	14.00	112	16.25

TAPER

INTERMEDIATE

BOTTOMING



- General purpose use
- Suitable for materials up to 1000 N/mm²
- Through & blind holes
- Suitable for both hand and machine operations
- Material: HSS
- Depths up to approx. 1 x d_i

Product Code	Size	Type	Pitch	Shank Dia.	Overall Length	Drill Dia.
TMS03	M3	Metric Hand Tap Set HSS	0.5	3.15	48	2.50
TMS04	M4	Metric Hand Tap Set HSS	0.7	4.00	53	3.30
TMS05	M5	Metric Hand Tap Set HSS	0.8	5.00	58	4.20
TMS06	M6	Metric Hand Tap Set HSS	1.0	6.30	66	5.00
TMS08	M8	Metric Hand Tap Set HSS	1.25	8.00	72	6.80
TMS10	M10	Metric Hand Tap Set HSS	1.5	10.00	80	8.50
TMS12	M12	Metric Hand Tap Set HSS	1.75	9.00	89	10.20
TMS14	M14	Metric Hand Tap Set HSS	2.0	11.20	95	12.00
TMS16	M16	Metric Hand Tap Set HSS	2.0	12.50	102	14.00
TMS18	M18	Metric Hand Tap Set HSS	2.5	14.00	112	15.50
TMS20	M20	Metric Hand Tap Set HSS	2.5	14.00	112	17.50
TMS24	M24	Metric Hand Tap Set HSS	3.0	18.00	130	21.00

TAPER

INTERMEDIATE

BOTTOMING



- General purpose use
- Suitable for materials up to 1000 N/mm²
- Through & blind holes
- Suitable for both hand and machine operations
- Material: HSS
- Depths up to approx. 1 x d_i

Product Code	Size	Type	Pitch	Shank Dia.	Overall Length	Drill Dia.
TWS08	1/8	BSW Hand Tap Set HSS	40	3.15	48	2.55
TWS10	5/32	BSW Hand Tap Set HSS	32	4.00	53	3.20
TWS12	3/16	BSW Hand Tap Set HSS	24(WHIT)	5.00	58	3.70
TWS16	1/4	BSW Hand Tap Set HSS	20	6.30	66	5.10
TWS20	5/16	BSW Hand Tap Set HSS	18	8.00	72	6.50
TWS24	3/8	BSW Hand Tap Set HSS	16	10.00	80	7.90
TWS28	7/16	BSW Hand Tap Set HSS	14	8.00	85	9.30
TWS32	1/2	BSW Hand Tap Set HSS	12	9.00	89	10.50



- General purpose use
- Suitable for materials up to 1000 N/mm²
- Through holes
- Material: HSSE
- Depths up to approx. 3 x d₁

Product Code	Size	Type	Pitch	Shank Dia.	Overall Length	Drill Dia.
TMG03	M3	M3 Gun Nose Tap HSS	0.5	3.15	48	2.5
TMG04	M4	M4 Gun Nose Tap HSS	0.7	4.00	53	3.3
TMG05	M5	M5 Gun Nose Tap HSS	0.8	5.00	58	4.2
TMG06	M6	M6 Gun Nose Tap HSS	1.0	6.30	66	5.0
TMG08	M8	M8 Gun Nose Tap HSS	1.25	8.00	72	6.8
TMG10	M10	M10 Gun Nose Tap HSS	1.5	10.00	80	8.5
TMG12	M12	M12 Gun Nose Tap HSS	1.75	9.00	89	10.2
TMG14	M14	M14 Gun Nose Tap HSS	2.0	11.20	95	12.0
TMG16	M16	M16 Gun Nose Tap HSS	2.0	12.50	102	14.0
TMG18	M18	M18 Gun Nose Tap HSS	2.5	14.00	112	15.5
TMG20	M20	M20 Gun Nose Tap HSS	2.5	14.00	112	17.5

Gun Taps - Imperial (BSW)

CUTTING TOOLS



- General purpose use
- Suitable for materials up to 1000 N/mm²
- Through holes
- Material: HSSE
- Depths up to approx. 3 x d₁

Product Code	Size	Type	Pitch	Shank Dia.	Overall Length	Drill Dia.
TWG08	1/8	1/8 Gun Nose Tap HSS	40.00	3.15	48	2.55
TWG10	5/32	5/32 Gun Nose Tap HSS	32.00	4.00	53	3.20
TWG12	3/16	3/16 Gun Nose Tap HSS	24.00	5.00	58	3.70
TWG16	1/4	1/4 Gun Nose Tap HSS	20.00	6.30	66	5.10
TWG20	5/16	5/16 Gun Nose Tap HSS	18.00	8.00	72	6.50
TWG24	3/8	3/8 Gun Nose Tap HSS	16.00	10.00	80	7.90
TWG32	1/2	1/2 Gun Nose Tap HSS	12.00	9.00	89	10.50
TWG40	5/8	5/8 Gun Nose Tap HSS	11.00	12.50	102	16.25
TWG48	3/4	3/4 Gun Nose Tap HSS	10.00	14.00	112	19.25



- General purpose use
- Suitable for materials up to 1000 N/mm²
- Blind holes
- Material: HSSE
- Depths up to approx. 2.5 x d₂

Product Code	Size	Type	Pitch	Shank Dia.	Overall Length	Drill Dia.
TSFM03	M3	M3 Spiral Fluted Tap HSS	0.5	3.15	48	2.5
TSFM04	M4	M4 Spiral Fluted Tap HSS	0.7	4.00	53	3.3
TSFM05	M5	M5 Spiral Fluted Tap HSS	0.8	5.00	58	4.2
TSFM06	M6	M6 Spiral Fluted Tap HSS	1.0	6.30	66	5.0
TSFM08	M8	M8 Spiral Fluted Tap HSS	1.25	8.00	72	6.8
TSFM10	M10	M10 Spiral Fluted Tap HSS	1.5	10.00	80	8.5
TSFM12	M12	M12 Spiral Fluted Tap HSS	1.75	9.00	89	10.2
TSFM14	M14	M14 Spiral Fluted Tap HSS	2.0	11.20	95	12.0
TSFM16	M16	M16 Spiral Fluted Tap HSS	2.0	12.50	102	14.0
TSFM20	M20	M20 Spiral Fluted Tap HSS	2.5	14.00	112	17.5



- General purpose use
- Suitable for materials up to 1000 N/mm²
- Through & blind holes
- Suitable for both hand and machine operations
- Material: HSS
- Taper pipe reamer recommended prior to tapping Rc (BSPT) thread form

Product Code	Size	Type	Pitch	Shank Dia.	Overall Length	Drill Dia.
TPT08ORD	1/8	1/8 BSPT TAP HSS	28	8.00	59	8.4
TPT16ORD	1/4	1/4 BSPT TAP HSS	19	10.00	67	10.8
TPT24ORD	3/8	3/8 BSPT TAP HSS	19	12.50	75	14.5
TPT32ORD	1/2	1/2 BSPT TAP HSS	14	16.00	87	18.0
TPT48ORD	3/4	3/4 BSPT TAP HSS	14	20.00	96	23.0

TAPER

INTERMEDIATE

BOTTOMING



- General purpose use
- Suitable for materials up to 1000 N/mm²
- Through & Blind holes
- Suitable for both hand and machine operations
- Material: HSS
- Depths up to approx. 1 x d₂

Product Code	Size	Type	Pitch	Shank Dia.	Overall Length	Drill Dia.
TP081	1/8	TAPER	28	8.00	59	8.80
TP082	1/8	INTERMEDIATE	28	8.00	59	8.80
TP083	1/8	BOTTOMING	28	8.00	59	8.80
TP161	1/4	TAPER	19	10.00	67	11.80
TP162	1/4	INTERMEDIATE	19	10.00	67	11.80
TP163	1/4	BOTTOMING	19	10.00	67	11.80
TP241	3/8	TAPER	19	12.50	75	15.30
TP242	3/8	INTERMEDIATE	19	12.50	75	15.30
TP243	3/8	BOTTOMING	19	12.50	75	15.30
TP321	1/2	TAPER	14	16.00	87	19.00
TP322	1/2	INTERMEDIATE	14	16.00	87	19.00
TP323	1/2	BOTTOMING	14	16.00	87	19.00
TP481	3/4	TAPER	14	20.00	96	24.50
TP482	3/4	INTERMEDIATE	14	20.00	96	24.50
TP483	3/4	BOTTOMING	14	20.00	96	24.50
TP641	1	TAPER	11	25.00	109	31.00
TP642	1	INTERMEDIATE	11	25.00	109	31.00
TP643	1	BOTTOMING	11	25.00	109	31.00

Button Dies - Metric

CUTTING TOOLS



- Metric Coarse
- Circular Split Button Die
- Material - HSS

Product Code	Size	Description	Pitch	Outer Ø (inch)
BD03	M3	3mm x 0.5 Pitch Button Die Outside Diameter 1 inch	0.5	1
BD04	M4	4mm x 0.7 Pitch Button Die Outside Diameter 1 inch	0.7	1
BD05	M5	5mm x 0.8 Pitch Button Die Outside Diameter 1 inch	0.8	1
BD06	M6	6mm x 1.0Pitch Button Die Outside Diameter 1 inch	1.0	1
BD08	M8	8mm x 1.25 Pitch Button Die Outside Diameter 1 inch	1.25	1
BD10	M10	10mm x 1.5 Pitch Button Die Outside Diameter 1 1/2 inch	1.5	1 1/2
BD12	M12	12mm x 1.75 Pitch Button Die Outside Diameter 1 1/2 inch	1.75	1 1/2
BD16	M16	16mm x 2.0 Pitch Button Die Outside Diameter 2 inch	2.0	2
BD20	M20	20mm x 2.5 Pitch Button Die Outside Diameter 2 inch	2.5	2



Bulk Inserts Available



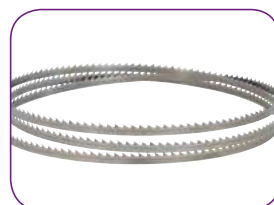
Kit Includes:

- High Speed Steel Drill
- HSS STI Tap
- Combination Tap and Installation Tool
- Magnetic Tang Removal Tool
- Quantity of Inserts
- Easy to follow instruction
- All contained in a quality case

Product Code	Description
RC02-0.4	M2 x 0.4 Thread Repair Kit
RC03-0.5	M3 x 0.5 Thread Repair Kit
RC04-0.7	M4 x 0.7 Thread Repair Kit
RC05-0.8	M5 x 0.8 Thread Repair Kit
RC06-1.0	M6 x 1.0 Thread Repair Kit
RC08-1.25	M8 x 1.25 Thread Repair Kit
RC10-1.5	M10 x 1.5 Thread Repair Kit
RC12-1.75	M12 x 1.75 Thread Repair Kit



Product	Product Code	Volume	Description
Treflex Paste	CRC-TREF500ML	500ml	Treflex is a green coloured, active cutting compound. Suitable for pipe screwing, hack sawing, tapping, reaming, etc.
	CRC-TREF2LT	2 Litre	
Treflex HD Fluid	CRC-TREF HD 500	500ml	Treflex HD cutting fluid is an extreme duty, thick fluid that sticks to the cutting tool through out the operation. Ideal for tapping and drilling stainless steel, and titanium.
Cut ADE Fluid	MAT-CUTADE-050	500ml	Cutting fluid for direct application. Unique solution for dealing with metalworking in any way. No hazardous symbols. Longer tool life, less broken taps, better work piece finish.



- Quality Band Saw in plastic case x 100ft.
- Also available in HSS & Bi Metal
- Custom Bandsaws Blades Available

Product Code	Blade Width	Description
BB0408	1/4	8 Teeth Per Inch
BB0410	1/4	10 Teeth Per Inch
BB0414	1/4	14 Teeth Per Inch
BB0418	1/4	18 Teeth Per Inch
BB0608	3/8	8 Teeth Per Inch
BB0610	3/8	10 Teeth Per Inch
BB0614	3/8	14 Teeth Per Inch
BB0618	3/8	18 Teeth Per Inch
BB0624	3/8	24 Teeth Per Inch
BB0806	1/2	6 Teeth Per Inch
BB0808	1/2	8 Teeth Per Inch
BB0810	1/2	10 Teeth Per Inch
BB0814	1/2	14 Teeth Per Inch
BB0818	1/2	18 Teeth Per Inch
BB0824	1/2	24 Teeth Per Inch
BB1210	3/4	10 Teeth Per Inch

Hack Saw Frame & Blades

CUTTING TOOLS



Product Code	Pack Qty	Description	Material
HSF	1	Professional ergonomic design with soft grip handle. Premium quality Bi-Metal Cobolt HSS blade included.	Made from light-weight anodised Aluminium.

Product Code	Pack Qty	Teeth Per Inch	Material
HSB1218	2	18 Teeth Per Inch	Bi Metal HSS
HSB1224	2	24 Teeth Per Inch	Bi Metal HSS
HSB1232	2	32 Teeth Per Inch	Bi Metal HSS
HSBC1218	2	18 Teeth Per Inch	Bi Metal Cobalt HSS
HSBC1224	2	24 Teeth Per Inch	Bi Metal Cobalt HSS
HSBC1232	2	32 Teeth Per Inch	Bi Metal Cobalt HSS



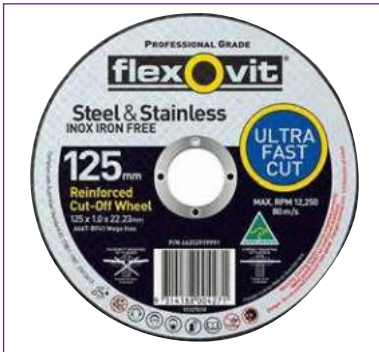
- Depressed Center
- For grinding stainless steel & hard ferrous metals
- Free of iron

Product Code	Size	Pack Qty
FlexGrind-SS-100-PKT	100 x 6 x 16	10 pcs
FlexGrind-SS-115-PKT	115 x 6 x 22	10 pcs
FlexGrind-SS-125-PKT	125 x 6.8 x 22	10 pcs
FlexGrind-SS-180-PKT	180 x 6.8 x 22	5 pcs
FlexGrind-SS-230-PKT	230 x 6.8 x 22	5 pcs



- Depressed Center
- General purpose grinding of ferrous metal welds and structural steels.
- Excellent grinding performance and life

Product Code	Size	Pack Qty
FLEXGRIND-GP100-PKT	100 x 6 x 16	10 pcs
FLEXGRIND-GP115-PKT	115 x 6 x 22	10 pcs
FLEXGRIND-GP125-PKT	125 x 6.8 x 22	10 pcs
FLEXGRIND-GP180-PKT	180 x 6.8 x 22	5 pcs
FLEXGRIND-GP230-PKT	230 x 6.5 x 22	5 pcs



- INOX Iron Free
- Premium grade
- For cutting stainless steel, alloy steel & hard ferrous metals
- Free of iron, sulphur & chlorine
- Fast, straight cutting
- Long life

Product Code	Size	Pack Qty
FLEXCUT-MI100-PKT	100 x 1.0 x 16	25 pcs
FLEXCUT-MI115-PKT	115 x 1.0 x 22	25 pcs
FLEXCUT-MI125-PKT	125 x 1.0 x 22	25 pcs
FLEXCUT-MI180-PKT	180 x 1.6 x 22	10 pcs
FLEXCUT-MI230-PKT	230 x 2.0 x 22	10 pcs



- Zirconium R828
- Industrial standard R828 cloth for improved product performance

Product Code	Size	Pack Qty	Grits
FLEXFLAP-ML100-040-PKT	100 x 16	10 pcs	Z40
FLEXFLAP-ML100-060-PKT	100 x 16	10 pcs	Z60
FLEXFLAP-ML100-080-PKT	100 x 16	10 pcs	Z80
FLEXFLAP-ML100-120-PKT	100 x 16	10 pcs	Z120
FLEXFLAP-ML115-040-PKT	115 x 22	10 pcs	Z40
FLEXFLAP-ML115-060-PKT	115 x 22	10 pcs	Z60
FLEXFLAP-ML115-080-PKT	115 x 22	10 pcs	Z80
FLEXFLAP-ML115-120-PKT	115 x 22	10 pcs	Z120
FLEXFLAP-ML125-040-PKT	125 x 22	10 pcs	Z40
FLEXFLAP-ML125-060-PKT	125 x 22	10 pcs	Z60
FLEXFLAP-ML125-080-PKT	125 x 22	10 pcs	Z80
FLEXFLAP-ML125-120-PKT	125 x 22	10 pcs	Z120



Product Code	Size	Grits
CUTOFF-1501019-60	150 X 1.0 X 19.05	#60
CUTOFF-1501631-46	150 X 1.6 X 31.75	#46
CUTOFF-1501631-60	150 X 1.6 X 31.75	#60
CUTOFF-1801631-46	180 X 1.6 X 31.75	#46
CUTOFF-1801631-60	180 X 1.6 X 31.75	#60
CUTOFF-2001631-46	200 X 1.6 X 31.75	#46
CUTOFF-2001631-60	200 X 1.6 X 31.75	#60

Grinding Wheels White Aluminium Oxide

ABRASIVES



Product Code	Size	Grits	Grade
GWW-1500631-120K	150 X 6 X 31.75	120K	WA
GWW-1500631-60K	150 X 6 X 31.75	60K	WA
GWW-1501331-46K	150 X 13 X 31.75	46K	WA
GWW-1501331-60K	150 X 13 X 31.75	60K	WA
GWW-1800631-46K	180 X 6 X 31.75	46K	WA
GWW-1800631-60K	180 X 6 X 31.75	60K	WA
GWW-1801331-46K	180 X 13 X 31.75	46K	WA
GWW-1801331-60K	180 X 13 X 31.75	60K	WA
GWW-1802031-46J	180 X 20 X 31.75	46J	WA
GWW-1802031-60J	180 X 20 X 31.75	60J	WA
GWW-2001331-46K	200 X 13 X 31.75	46K	WA
GWW-2001331-60K	200 X 13 X 31.75	60K	WA
GWW-2002031-46J	200 X 20 X 31.75	46J	WA
GWW-2002031-60J	200 X 20 X 31.75	60J	WA
GWW-2002050-46J	200 X 20 X 50.8	46J	WA
GWW-2002050-60J	200 X 20 X 50.8	60J	WA
GWW-2002531-60L	200 X 25 X 31.75	60L	WA
GWW-2002550-46J	200 X 25 X 50.8	46J	WA
GWW-2002550-60J	200 X 25 X 50.8	60J	WA
GWW-2502076-46J	250 X 20 X 76.2	46J	WA
GWW-2502076-60J	250 X 20 X 76.2	60J	WA
GWW-2502550-46J	250 X 25 X 50.8	46J	WA
GWW-2502576-46J	250 X 25 X 76.2	46J	WA
GWW-2502576-60J	250 X 25 X 76.2	60J	WA
GWW-3002576-46J	300 X 25 X 76.2	46J	WA
GWW-3002576-60K	300 X 25 X 76.2	60K	WA
GWW-30038127-46K	300 X 36 X 127 V5A	46K	WA

Surface Grinding Wheel Blue Ceramic

ABRASIVES



Product Code	Size	Grits	Grade
GWB-1801331-46K	180 X 13 X 31.75	46k	3CXG
GWB-1801331-60K	180 X 13 X 31.75	60K	3CXG
GWB-2001331-46K	200 X 13 X 31.75	46K	3CXG
GWB-2001331-60K	200 X 13 X 31.75	60K	3CXG
GWB-35025127-46K	350 X 25 X 127	46K	3CXG
GWB-35040127-46K	350 X 40 X 127	46K	3CXG
GWB-40050127-46J	400 X 50 X 127	46J	3CXG

- More sizes available

ABRASIVES

Grinding Wheels Pink Aluminium Oxide



Product Code	Size	Grits	Grade
GWP-30050127-60	300 X 50 X 127	60	PA
GWP-3005076-46	300 X 50 X 76.2	46	PA
GWP-35038127-46	350 X 38 X 127	46	PSA
GWP-35038127-60	350 X 38 X 127	60	PA

- More sizes available

ABRASIVES

Diamond Dresser



Industrial diamond dresser is best for rapid dressing, reshaping or de-glazing all grinding wheels.

Product Code	Diameter	Carat
DD035	3/8	0.5 Crt
DD045	1/2	0.5 Crt

ABRASIVES

Bench Grinding Wheels Grey Aluminium Oxide



Product Code	Size	Grits	Grade
GWGY-1502525-A36	150 X 25 X 25.4	36	A36P
GWGY-1502525-A46	151 X 25 X 25.4	46	A46M
GWGY-1502525-A60	152 X 25 X 25.4	60	A60M
GWGY-1802531-A60	180 X 25 X 31.75	60	A60M
GWGY-2002031-A60	200 X 20 X 31.75	60	A60M
GWGY-2002531-A36	200 X 20 X 31.75	36	A36P
GWGY-2002531-A46	200 X 20 X 31.75	46	A46M
GWGY-2002531-A60	200 X 20 X 31.75	60	A60M

- More sizes available

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Bench Grinding Wheels Green Silicone Carbide



Product Code	Size	Grits	Grade
GWGN-1502531-60K	150 X 25 X 31.75	60K	GC
GWGN-1502531-80K	150 X 25 X 31.75	80K	GC
GWGN-1802531-60K	180 X 25 X 31.75	60K	GC
GWGN-2002531-60K	200 X 25 X 31.75	60K	GC
GWGN-2002531-80K	200 X 25 X 31.75	80K	GC

- For stationary bench / pedestal grinder
- More sizes available

ABRASIVES

Dressing Sticks



Product Code	Size	Colour
DS-20	20mm Sq	DARK GREY
DS-25	25mm Sq	DARK GREY



Width 25mm	
Product Code	Grits
ER25060	60#
ER25080	80#
ER25120	120#
ER25180	180#
ER25240	240#
ER25320	320#

Width 40mm	
Product Code	Grits
ER40060	60#
ER40080	80#
ER40120	120#
ER40180	180#
ER40240	240#
ER40320	320#

Width 50mm	
Product Code	Grits
ER50060	60#
ER50080	80#
ER50100	100#
ER50120	120#
ER50180	180#
ER50240	240#
ER50320	320#

Wet & Dry

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Product Code	Grits
WD0080	80#
WD0100	100#
WD0120	120#
WD0150	150#
WD0180	180#
WD0220	220#
WD0240	240#
WD0280	280#

Product Code	Grits
WD0320	320#
WD0400	400#
WD0500	500#
WD0600	600#
WD0800	800#
WD1000	1000#
WD1200	1200#

Economy Air Grinder

ABRASIVES



Product Code	RPM
LDG5202	54,000 Rpm

Suits 3mm and 1/8 shank

Premium Air Grinder

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Product Code	RPM
AG	64,000 Rpm

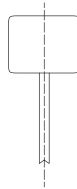
Suits 1/8 shank

120° Angled Air Grinder

ABRASIVES



Product Code	RPM
LDG7101	22,000 Rpm



"W" Shapes

All W Shapes are basically rectangular or square. The diameter (D) and thickness (T)

Product Code	Diameter	Thick	Mandrel
MP-W142	3/32	1/4	1/8
MP-W144	1/8	1/4	1/8
MP-W145	1/8	3/8	1/8
MP-W146	1/8	1/2	1/8
MP-W149	5/32	1/4	1/8
MP-W153	3/16	3/8	1/8
MP-W154	3/16	1/2	1/8
MP-W159	1/4	3/16	1/8
MP-W160	1/4	1/4	1/8
MP-W162	1/4	3/8	1/8
MP-W163	1/4	1/2	1/8
MP-W164	1/4	3/4	1/8
MP-W167	5/16	1/4	1/8
MP-W170	5/16	1/2	1/8
MP-W176	3/8	1/2	1/8
MP-W177	3/8	3/4	1/8
MP-W182	1/2	1/8	1/8
MP-W185	1/2	1/2	1/8
MP-W186	1/2	3/4	1/4
MP-W188	1/2	1 1/2	1/4
MP-W201	3/4	1/4	1/8
MP-W204	3/4	3/4	1/4
MP-W215	1	1/8	1/8
MP-W216	1	1/4	1/4
MP-W218	1	1/2	1/4
MP-W220	1	1	1/4
MP-W236	1 1/2	1/2	1/4
MP-W237	1 1/2	1	1/4

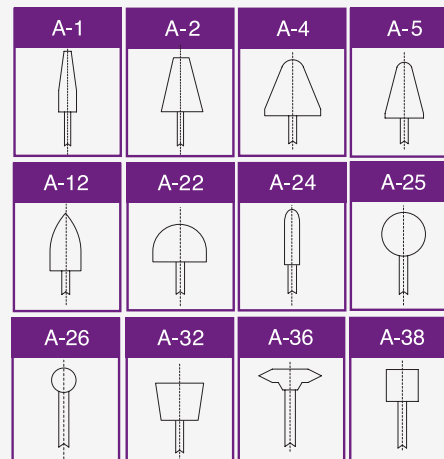
*Additional sizes available upon request

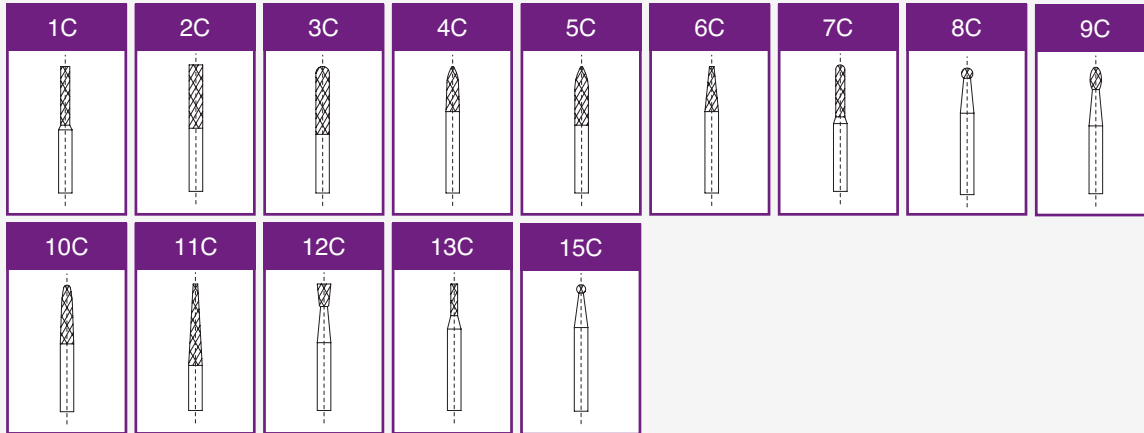


Product Code	Diameter	Thick	Mandrel
MP-B41	5/8	5/8	1/8
MP-B42	1/2	3/4	1/8
MP-B43	1/4	5/16	1/8
MP-B44	7/32	3/8	1/8
MP-B45	3/16	5/16	1/8
MP-B51	7/16	3/4	1/8
MP-B52	3/8	3/4	1/8
MP-B53	1/4	5/8	1/8
MP-B55	1/8	1/4	1/8
MP-B61	3/4	5/16	1/8
MP-B71	5/8	1/8	1/8
MP-B72	1/2	1/8	1/8
MP-B81	3/4	3/16	1/8
MP-B82	1/2	1/4	1/8
MP-B91	1/2	5/8	1/8
MP-B92	1/4	1/4	1/8
MP-B96	1/8	3/16	1/8
MP-B97	1/8	3/8	1/8
MP-B98	3/32	1/4	1/8
MP-B103	5/8	3/16	1/8
MP-B121	1/2	1/2	1/8
MP-B122	3/8	3/8	1/8
MP-B123	3/16	3/16	1/8
MP-B125	1/4	1/4	1/8
MP-B131	1/2	1/2	1/8
MP-B132	3/8	1/2	1/8
MP-B135	1/4	1/2	1/8

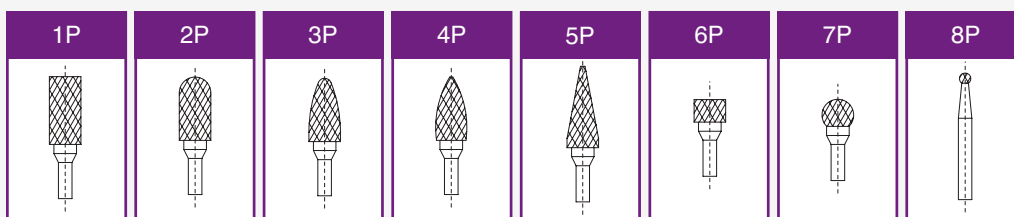


Product Code	Diameter	Thick	Mandrel
MPA-1	3/4	2 1/2	1/4
MPA-2	1	1 1/4	1/4
MPA-4	1 1/4	1 1/4	1/4
MPA-5	3/4	1 1/8	1/4
MPA-12	11/16	1 1/4	1/4
MPA-22	3/4	5/8	1/4
MPA-24	1/4	1	1/4
MPA-25	1	1	1/4
MPA-26	5/8	5/8	1/4
MPA-32	1	5/8	1/4
MPA-36	5/8	3/8	1/4
MPA-38	1	1	1/4





Product Code	Shank Diameter	Cutting Diameter	Flute Length
1C	1/8"	3/32"	7/16"
2C	1/8"	1/8"	9/16"
3C	1/8"	1/8"	9/16"
4C	1/8"	1/8"	3/8"
5C	1/8"	1/8"	1/2"
6C	1/8"	1/8"	11/32"
7C	1/8"	3/32"	7/16"
8C	1/8"	1/8"	1/8"
9C	1/8"	1/8"	7/32"
10C	1/8"	1/8"	1/2"
11C	1/8"	1/8"	5/8"
12C	1/8"	1/8"	3/16"
13C	1/8"	1/16"	1/4"
15C	1/8"	3/32"	3/32"



Product Code	Shank Diameter	Cutting Diameter	Flute Length
1P	1/8"	1/4"	1/2"
2P	1/8"	1/4"	1/2"
3P	1/8"	1/4"	1/2"
4P	1/8"	1/4"	1/2"
5P	1/8"	1/4"	1/2"
6P	1/8"	1/4"	3/16"
7P	1/8"	1/4"	1/4"
8P	1/8"	1/4"	3/8"



SET
12 PC



SET
9 PC

Product Code	Description
BURSET 1#	12 pcs 1/8" sold in wooden case
BURSET 5#	9 pcs 1/4" sold in wooden case

Diamond Points Set

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SET
30 PC

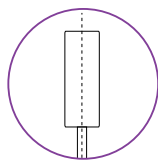
Product Code	Description
DP	30pcs Medium grit diamond plated mounted points. Sold in a plastic case.

Diamond Rubbing Points

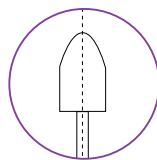
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Product Code	Diameter	Overall Length	Grits	Colour
RP04080	4 mm	13 mm	80#	ORANGE
RP06120	6 mm	17 mm	120#	GREEN
RP06180	6 mm	17 mm	180#	YELLOW
RP08080	8 mm	20 mm	80#	ORANGE
RP08120	8 mm	20 mm	120#	GREEN
RP08180	8 mm	20 mm	180#	YELLOW
RP10080	10 mm	20 mm	80#	ORANGE
RP10120	10 mm	20 mm	120#	GREEN
RP10180	10 mm	20 mm	180#	YELLOW
RP13080	13 mm	20 mm	80#	ORANGE
RP20080	20 mm	25 mm	80#	ORANGE
RP20120	20 mm	25 mm	120#	GREEN
RP20180	20 mm	25 mm	180#	YELLOW



Standard Felt Bob



Standard Felt Cone

FB = Standard Felt Bob

FBH = Hard Felt Bob

FC = Standard Felt Cone

Product Code	Dia.	Overall Length	Shank Size
FB1414	1/4	1/4	1/8
FB14516	1/4	5/16	1/8
FB3838	3/8	3/8	1/8
FB1212	1/2	1/2	1/8
FB121	1/2	1	1/8
FB58118	5/8	1 1/8	1/8
FB3434	3/4	3/4	1/8
FB11	1	1	1/8

Product Code	Dia.	Overall Length	Shank Size
FBH1414	1/4	1/4	1/8
FBH3838	3/8	3/8	1/8
FBH1212	1/2	1/2	1/8
FBH3434	3/4	3/4	1/8

Product Code	Dia.	Overall Length	Shank Size
FC14	1/4	5/8	1/8
FC24	3/8	7/8	1/8
FC12	1/2	1	1/8
FC58	5/8	1 1/4	1/8



Product Code	Micron	Colour	Description
DP01	1 Micron	Light Blue	The Superfine grade is for those applications which demand the highest possible accuracy and mirror finish.
DP03	3 Micron	Green	
DP06	6 Micron	Yellow	
DP09	9 Micron	Red	The Medium grades ensure a perfect intermediate surface for finishing to a high grade commercial polish with the Find grades.
DP15	15 Micron	Light Brown	
DP30	30 Micron	Dark Brown	
DP45	45 Micron	Purple	The Coarse and Extra Coarse grades ensure rapid stock removal for eliminating machining marks, deep scratches or blemishes.
DP60	60 Micron	Orange	



Diamond Thinner is used to thin the slurry, extend diamond compound and reduce gumming

Product Code	Volume
DPT04	40oz (1.18 Ltr)
DPT16	160oz (4.75 Ltr)

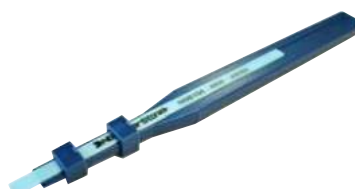


- Made from long ceramic fibres embedded in the thermoset resin.
- Exhibit superior strength compared to normal abrasive stones
- High tensile strength yet can be flexed without breaking
- Incomparable polishing ability, producing fine surface finish with minimal wear
- Used with ultrasonic polishers, offer aggressive stock removal

Product Code	Size	Grits	Colour
CSSEM102L	1 X 2 X 150	120#	Emerald
CSSEM106L	1 X 6 X 150	120#	Emerald
CSSEM110L	1 X 10 X 150	120#	Emerald
CSSG102L	1 X 2 X 150	180#	Gold
CSSG106L	1 X 6 X 150	180#	Gold
CSSG110L	1 X 10 X 150	180#	Gold
CSSLB102L	1 X 2 X 150	300#	Light Brown
CSSLB106L	1 X 6 X 150	300#	Light Brown
CSSLB110L	1 X 10 X 150	300#	Light Brown
CSSOR102L	1 X 2 X 150	400#	Orange
CSSOR106L	1 X 6 X 150	400#	Orange
CSSOR110L	1 X 10 X 150	400#	Orange
CSSBR102L	1 X 2 X 150	600#	Brown
CSSBR106L	1 X 6 X 150	600#	Brown
CSSBR110L	1 X 10 X 150	600#	Brown
CSSB102L	1 X 2 X 150	800#	Blue
CSSB106L	1 X 6 X 150	800#	Blue
CSSB110L	1 X 10 X 150	800#	Blue
CSSW102L	1 X 2 X 150	1000#	White
CSSW106L	1 X 6 X 150	1000#	White
CSSW110L	1 X 10 X 150	1000#	White
CSSR102L	1 X 2 X 150	1200#	Red
CSSR106L	1 X 6 X 150	1200#	Red
CSSR110L	1 X 10 X 150	1200#	Red

Stone Holders

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Product Code	Description
SSH2	Superstone Holder for 2mm stones
SSH6	Superstone Holder for 6mm stones
SSH10	Superstone Holder for 10mm stones



AM2 Polishing Stone:

- Most popular all-round finishing stone, suitable for all types of mould & die steels.
- Grits: 100, 150, 180, 220, 320, 400, 600, 900

Product Code	Size	Grits
AM21818150	1/8 X 1/8 X 150 Am2 Stone	150#
AM21818220	1/8 X 1/8 X 220 Am2 Stone	220#
AM21818320	1/8 X 1/8 X 320 Am2 Stone	320#
AM21818400	1/8 X 1/8 X 400 Am2 Stone	400#
AM21818600	1/8 X 1/8 X 600 Am2 Stone	600#
AM21814150	1/8 X 1/4 X 150 Am2 Stone	150#
AM21814220	1/8 X 1/4 X 220 Am2 Stone	220#
AM21814320	1/8 X 1/4 X 320 Am2 Stone	320#
AM21814400	1/8 X 1/4 X 400 Am2 Stone	400#
AM21814600	1/8 X 1/4 X 600 Am2 Stone	600#
AM21814150	1/8 X 1/4 X 150 Am2 Stone	150#
AM21814220	1/8 X 1/4 X 220 Am2 Stone	220#
AM21814320	1/8 X 1/4 X 320 Am2 Stone	320#
AM21814400	1/8 X 1/4 X 400 Am2 Stone	400#
AM21814600	1/8 X 1/4 X 600 Am2 Stone	600#
AM21812100	1/8 X 1/2 X 100 Am2 Stone	100#
AM21812150	1/8 X 1/2 X 150 Am2 Stone	150#
AM21812220	1/8 X 1/2 X 220 Am2 Stone	220#
AM21812320	1/8 X 1/2 X 320 Am2 Stone	320#
AM21812400	1/8 X 1/2 X 400 Am2 Stone	400#
AM21812600	1/8 X 1/2 X 600 Am2 Stone	600#
AM21812900	1/8 X 1/2 900 Am2 Stone	900#
AM21813200	1/8 X 1 x 320 Am2 Stone	320#
AM2181400	1/8 X 1 X 400 Am2 Stone	400#
AM2181600	1/8 X 1 X 600 Am2 Stone	600#
AM21414100	1/4 X 1/4 X 100 Am2 Stone	100#
AM21414150	1/4 X 1/4 X 150 Am2 Stone	150#
AM21414180	1/4 X 1/4 X 180 Am2 Stone	180#
AM21414220	1/4 X 1/4 X 220 Am2 Stone	220#
AM21414320	1/4 X 1/4 X 320 Am2 Stone	320#
AM21414400	1/4 X 1/4 X 400 Am2 Stone	400#
AM21414600	1/4 X 1/4 X 600 Am2 Stone	600#
AM21414900	1/4 X 1/4 X 900 Am2 Stone	900#
AM21412100	1/4 X 1/2 X 100 Am2 Stone	100#
AM21412150	1/4 X 1/2 X 150 Am2 Stone	150#
AM21412180	1/4 X 1/2 X 180 Am2 Stone	180#
AM21412220	1/4 X 1/2 X 220 Am2 Stone	220#
AM21412320	1/4 X 1/2 X 320 Am2 Stone	320#
AM21412400	1/4 X 1/2 X 400 Am2 Stone	400#
AM21412600	1/4 X 1/2 X 600 Am2 Stone	600#
AM2141100	1/4 X 1 X 100 Am2 Stone	100#
AM2141150	1/4 X 1 X 150 Am2 Stone	150#
AM2141220	1/4 X 1 X 220 Am2 Stone	220#

**AM2 Polishing Stone:**

- Most popular all-round finishing stone, suitable for all types of mould & die steels.
- Grits: 100, 150, 180, 220, 320, 400, 600, 900

Product Code	Size	Grits
AM2141320	1/4 X 1 X 320 Am2 Stone	320#
AM2141400	1/4 X 1 X 400 Am2 Stone	400#
AM2141600	1/4 X 1 X 600 Am2 Stone	600#
AM23838150	3/8 X 3/8 X 150 Am2 Stone	150#
AM23838220	3/8 X 3/8 X 220 Am2 Stone	220#
AM21212100	1/2 X 1/2 X 100 Am2 Stone	100#
AM21212150	1/2 X 1/2 X 150 Am2 Stone	150#
AM21212220	1/2 X 1/2 X 220 Am2 Stone	220#
AM21212320	1/2 X 1/2 X 320 Am2 Stone	320#
AM21212400	1/2 X 1/2 X 400 Am2 Stone	400#
AM21212600	1/2 X 1/2 X 600 Am2 Stone	600#
AM2121100	1/2 X 1 X 100 Am2 Stone	100#
AM2121150	1/2 X 1 X 150 Am2 Stone	150#
AM2121220	1/2 X 1 X 220 Am2 Stone	220#
AM2121320	1/2 X 1 X 320 Am2 Stone	320#
AM2121400	1/2 X 1 X 400 Am2 Stone	400#
AM2121600	1/2 X 1 X 600 Am2 Stone	600#
AM211100	1 X 1 X 100 Am2 Stone	100#
AM211150	1 X 1 X 150 Am2 Stone	150#
AM211220	1 X 1 X 220 Am2 Stone	220#
AM211320	1 X 1 X 320 Am2 Stone	320#

BORIDE Polishing Stone - AM2 Round

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**AM2 Polishing Stone - Round:**

- Most popular all-round finishing stone, suitable for all types of mould & die steels.
- Grits: 220, 320

Product Code	Size	Grits
AM2-14R220	1/4 X 220 Am2 Round Stone	220#
AM2-14R320	1/4 X 320 Am2 Round Stone	320#
AM2-38R220	3/8 X 220 Am2 Round Stone	220#
AM2-38R320	3/8 X 320 Am2 Round Stone	320#
AM2-12R220	1/2 X 220 Am2 Round Stone	220#
AM2-12R320	1/2 X 320 Am2 Round Stone	320#



AM8 Polishing Stone:

- AM8 Polishing Stone removes EDM scale on all types of mold and die steel
- Grits: 100, 120, 150, 220, 320, 400, 600

Product Code	Size	Grits
AM81814150	1/8 X 1/4 X 150 Am8 Stone	150#
AM81814220	1/8 X 1/4 X 220 Am8 Stone	220#
AM81814320	1/8 X 1/4 X 320 Am8 Stone	320#
AM81814400	1/8 X 1/4 X 400 Am8 Stone	400#
AM81814600	1/8 X 1/4 X 600 Am8 Stone	600#
AM81812100	1/8 X 1/2 X 100 Am8 Stone	100#
AM81812120	1/8 X 1/2 X 120 Am8 Stone	120#
AM81812150	1/8 X 1/2 X 150 Am8 Stone	150#
AM81812220	1/8 X 1/2 X 220 Am8 Stone	220#
AM81812320	1/8 X 1/2 X 320 Am8 Stone	320#
AM81812400	1/8 X 1/2 X 400 Am8 Stone	400#
AM81812600	1/8 X 1/2 X 600 Am8 Stone	600#
AM81414100	1/4 X 1/4 X 100 Am8 Stone	100#
AM81414150	1/4 X 1/4 X 150 Am8 Stone	150#
AM81414220	1/4 X 1/4 X 220 Am8 Stone	220#
AM81414320	1/4 X 1/4 X 320 Am8 Stone	320#
AM81414400	1/4 X 1/4 X 400 Am8 Stone	400#
AM81414600	1/4 X 1/4 X 600 Am8 Stone	600#
AM81412100	1/4 X 1/2 X 100 Am8 Stone	100#
AM81412120	1/4 X 1/2 X 120 Am8 Stone	120#
AM81412150	1/4 X 1/2 X 150 Am8 Stone	150#
AM81412220	1/4 X 1/2 X 220 Am8 Stone	220#
AM81412320	1/4 X 1/2 X 320 Am8 Stone	320#
AM81412400	1/4 X 1/2 X 400 Am8 Stone	400#
AM81412600	1/4 X 1/2 X 600 Am8 Stone	600#



CS Polishing Stone:

- Fast cutting black silicone carbide general purpose polishing stone, used on all tool steels as well as used for roughing out on non-ferrous materials
- Grits: 120, 150, 180, 220, 320, 400, 600

Product Code	Size	Grits
CS1814150	1/8 X 1/4 X 150 CS Stone	150#
CS1812150	1/8 X 1/2 X 150 CS Stone	150#
CS1812180	1/8 X 1/2 X 180 CS Stone	180#
CS1812320	1/8 X 1/2 X 320 CS Stone	320#
CS1812400	1/8 X 1/2 X 400 CS Stone	400#
CS1812600	1/8 X 1/2 X 600 CS Stone	600#
CS1414150	1/4 X 1/4 X 150 CS Stone	150#
CS1414220	1/4 X 1/4 X 220 CS Stone	220#
CS1414320	1/4 X 1/4 X 320 CS Stone	320#

Product Code	Size	Grits
CS1414400	1/4 X 1/4 X 400 CS Stone	400#
CS1412150	1/4 X 1/2 X 150 CS Stone	150#
CS1412220	1/4 X 1/2 X 220 CS Stone	220#
CS1412320	1/4 X 1/2 X 320 CS Stone	320#
CS1212150	1/2 X 1/2 X 150 CS Stone	150#
CS1212220	1/2 X 1/2 X 220 CS Stone	220#
CS1212320	1/2 X 1/2 X 320 CS Stone	320#
CS11400	1 X 1 X 400 CS Stone	400#
CS11600	1 X 1 X 600 CS Stone	600#

**T2 Polishing Stone:**

- T2 Polishing Stone is a medium-hard aluminium oxide stone that cuts very fast yet providing a silky smooth finish on quality mould steel such as P-20, H-13 & 420
- Grits: 150, 220, 320, 400, 600

Product Code	Size	Grits
T21814150	1/8 X 1/4 X 150 T2 Stone	150#
T21814220	1/8 X 1/4 X 220 T2 Stone	220#
T21812150	1/8 X 1/2 X 150 T2 Stone	150#
T21812220	1/8 X 1/2 X 220 T2 Stone	220#
T21414150	1/4 X 1/4 X 150 T2 Stone	150#
T21414220	1/4 X 1/4 X 220 T2 Stone	220#
T21414320	1/4 X 1/4 X 320 T2 Stone	320#
T21414400	1/4 X 1/4 X 400 T2 Stone	400#
T21414600	1/4 X 1/4 X 600 T2 Stone	600#
T21412150	1/4 X 1/2 X 150 T2 Stone	150#
T21412220	1/4 X 1/2 X 220 T2 Stone	220#
T21412320	1/4 X 1/2 X 320 T2 Stone	320#
T21412400	1/4 X 1/2 X 400 T2 Stone	400#
T21412600	1/4 X 1/2 X 600 T2 Stone	600#

Polishing Lubricant

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For mould polishing to clean, lubricate and prevent stone loading.
Water based, odour free and easy to clean.

Product Code	Volume
ABORI-LARGE	4.54 Litre

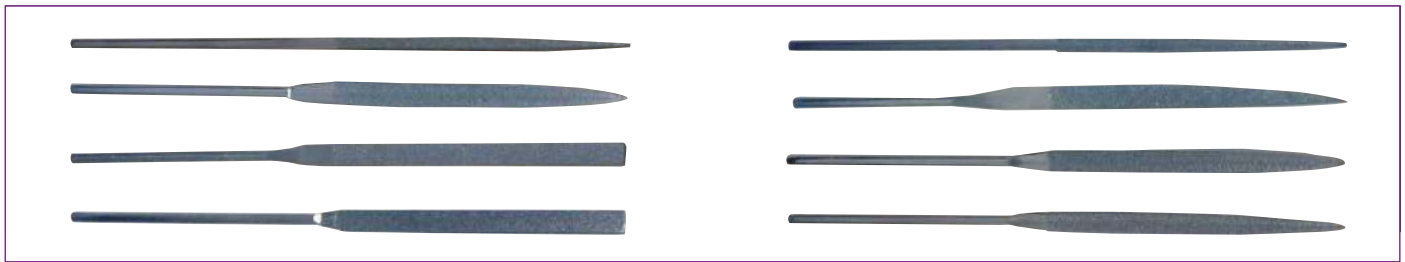
Combination Stone

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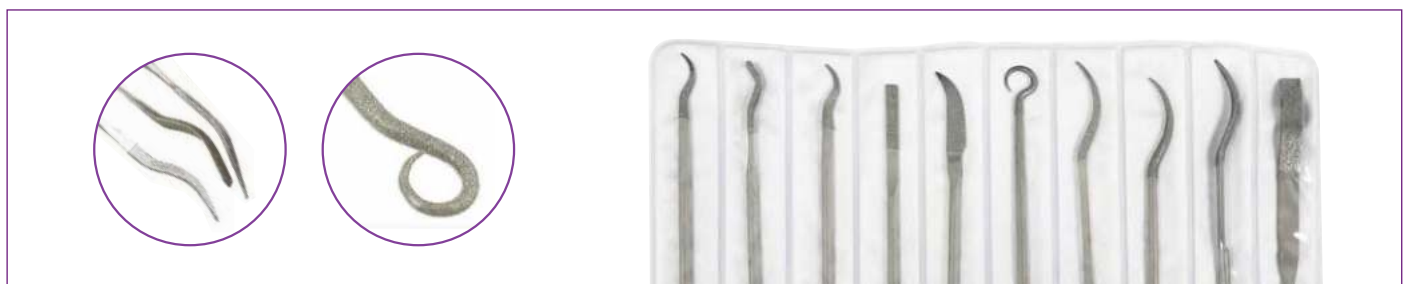


This aluminium oxide combination stones have a fine side for finishing
and a course side for re-grinding.

Product Code	Size	Material
COMSTONE-S	5/8 X 1 5/8 X 4 1/2	Aluminium Oxide
COMSTONE-L	1 X 2 X 8	Aluminium Oxide



Product Code	Description	Shank Dia.	Overall Length
DP1	Square Diamond Needle File	3mm	140mm
DP2	Half Round Diamond Needle File	3mm	140mm
DP3	Triangular Diamond Needle File	3mm	140mm
DP4	Flat Diamond Needle File	3mm	140mm
DP5	Round Diamond Needle File	3mm	140mm
DP6	Knife Diamond Needle File	3mm	140mm
DP7	Lozenge Diamond Needle File	3mm	140mm
DP9	Oval Diamond Needle File	3mm	140mm



Product Code	Description
DR	10pc set. Sold in plastic pouch



Product Code	Description
NFS	12pc Needle File set. Sold in plastic case.



Product Code	Description	Length
WF061	Smooth Flat File	6"
WF062	2nd Cut Flat File	6"
WF063	Bastard Flat File	6"
WF081	Smooth Flat File	8"
WF082	2nd Cut Flat File	8"
WF083	Bastard Flat File	8"

Product Code	Description	Length
WF101	Smooth Flat File	10"
WF102	2nd Cut Flat File	10"
WF103	Bastard Flat File	10"
WF121	Smooth Flat File	12"
WF122	2nd Cut Flat File	12"
WF123	Bastard Flat File	12"

Hand File

ABRASIVES



Product Code	Description	Length
WH061	Smooth Hand File	6"
WH062	2nd Cut Hand File	6"
WH063	Bastard Hand File	6"
WH081	Smooth Hand File	8"
WH082	2nd Cut Hand File	8"
WH083	Bastard Hand File	8"

Product Code	Description	Length
WH101	Smooth Hand File	10"
WH102	2nd Cut Hand File	10"
WH103	Bastard Hand File	10"
WH121	Smooth Hand File	12"
WH122	2nd Cut Hand File	12"
WH123	Bastard Hand File	12"

3 Square Hand File

ABRASIVES



Product Code	Description	Length (inch)
WT061	Smooth 3 Square File	6"
WT062	2nd Cut 3 Square File	6"
WT082	2nd Cut 3 Square File	8"



Product Code	Description	Length
WS061	Smooth Square File	6"
WS062	2nd Cut Square File	6"
WS063	Bastard Square File	6"
WS081	Smooth Square File	8"
WS082	2nd Cut Square File	8"
WS083	Bastard Square File	8"

Product Code	Description	Length
WS101	Smooth Square File	10"
WS102	2nd Cut Square File	10"
WS103	Bastard Square File	10"
WS121	Smooth Square File	12"
WS122	2nd Cut Square File	12"
WS123	Bastard Square File	12"



Product Code	Description	Length
WR061	Smooth Round File	6"
WR062	2nd Cut Round File	6"
WR063	Bastard Round File	6"
WR081	Smooth Round File	8"
WR082	2nd Cut Round File	8"
WR083	Bastard Round File	8"

Product Code	Description	Length
WR101	Smooth Round File	10"
WR102	2nd Cut Round File	10"
WR103	Bastard Round File	10"
WR121	Smooth Round File	12"
WR122	2nd Cut Round File	12"
WR123	Bastard Round File	12"



Product Code	Description	Length
WZ041	Smooth Half Round File	4"
WZ042	2nd Cut Half Round File	4"
WZ043	Bastard Half Round File	4"
WZ061	Smooth Half Round File	6"
WZ062	2nd Cut Half Round File	6"
WZ063	Bastard Half Round File	6"
WZ081	Smooth Half Round File	8"
WZ082	2nd Cut Half Round File	8"

Product Code	Description	Length
WZ083	Bastard Half Round File	8"
WZ101	Smooth Half Round File	10"
WZ102	2nd Cut Half Round File	10"
WZ103	Bastard Half Round File	10"
WZ121	Smooth Half Round File	12"
WZ122	2nd Cut Half Round File	12"
WZ123	Bastard Half Round File	12"



Product Code	Description	Length (inch)
FH4	Suits 4-6 inch files	4"
FH5	Suits 8-10 inch files	5"
FH6	Suits 10-12 Inch files	6"



HYSOL MB50 is especially designed for machining of ferrous and aluminium alloys.

- High Performance soluble metalworking fluid
- Unique additives that enhances machining performance and surface finish
- Chlorine and Formaldehyde releasing agent free
- Improves bio-resistance properties - lowers overall operations cost
- Suitable for large central systems
- Suitable for single pump machines.

NOTE: Not recommended for use with yellow metals.

Product Code	Description	Pack Description
CAS-HYSOLMB50-020	Hysol MB 50	20L Pail
CAS-HYSOLMB50-205	Hysol MB 50	205L Drum

High Performance Soluable Metalworking Fluid
CASTROL HYSOL X

LUBRICANTS, OILS & GREASES



Hysol X is especially designed for machining of steel, stainless steel and aluminium alloys.

- High Performance soluble metalworking fluid
- Unique additives that enhances machining performance and surface finish
- Chlorine free
- Suitable for large central systems
- Suitable for single pump machines.

Product Code	Description	Pack Description
CAS-HYSOLX-020	Hysol X	20L Pail
CAS-HYSOLX-205	Hysol X	205L Drum

Air Compressor Lubricant
CASTROL AIRCOL

LUBRICANTS, OILS & GREASES



Air Compressor Lubricant designed to reduce heat and friction in rotary screw and reciprocating compressors.

- Suitable for hydraulic, air and gas compressors.
- Suitable for small units to large multi-stage configurations
- Also includes oils for refrigeration systems

Product Code	Description	Pack Description
CAS-AIRCOLMR46-020	Aircol MR 46	20L Pail
CAS-AIRCOLMR46-205	Aircol MR 46	205L Drum
CAS-AIRCOLMR68-020	Aircol MR 68	20L Pail
CAS-AIRCOLMR68-205	Aircol MR 68	205L Drum
CAS-AIRCOLPD46-020	Aircol PD 46	20L Pail
CAS-AIRCOLPD100-020	Aircol PD 100	20L Pail
CAS-AIRCOLPD100-205	Aircol PD 100	205L Drum
CAS-AIRCOLSN100-020	Aircol SN 100	20L Pail
CAS-AIRCOLSN100-205	Aircol SN 100	205L Drum
CAS-AIRCOLSR46-020	Aircol SR 46	20L Pail
CAS-AIRCOLSR46-205	Aircol SR 46	205L Drum
CAS-AIRCOLSR68-020	Aircol SR 68	20L Pail
CAS-AIRCOLSR68-205	Aircol SR 68	205L Drum



The Castrol Alpha SP gear oil range of high quality lubricants are based upon highly refined mineral oil, enhanced with an extreme pressure additive technology providing good thermal stability and high load carrying capacity.

Product Code	Description	Pack Description
CAS-ALPSP068-020	Alpha SP 68	20L Pail
CAS-ALPSP068-205	Alpha SP 68	205L Drum
CAS-ALPSP100-020	Alpha SP 100	20L Pail
CAS-ALPSP100-205	Alpha SP 100	205L Drum
CAS-ALPSP150-020	Alpha SP 150	20L Pail
CAS-ALPSP150-205	Alpha SP 150	205L Drum
CAS-ALPSP220-020	Alpha SP 220	20L Pail
CAS-ALPSP220-205	Alpha SP 220	205L Drum
CAS-ALPSP320-020	Alpha SP 320	20L Pail
CAS-ALPSP320-205	Alpha SP 320	205L Drum
CAS-ALPSP460-020	Alpha SP 460	20L Pail
CAS-ALPSP460-205	Alpha SP 460	205L Drum
CAS-ALPSP680-020	Alpha SP 680	20L Pail
CAS-ALPSP680-205	Alpha SP 680	205L Drum



The Castrol Alphasyn EP gear oil range of high quality synthetic lubricants are based on poly-alphaolefin (PAO) fluids and sulphur/phosphorus Extreme Pressure (EP) additive technology providing good thermal stability and high load carrying capacity.

Product Code	Description	Pack Description
CAS-ALPEP220-020	Alphasyn EP 220	20L Pail
CAS-ALPEP220-205	Alphasyn EP 220	205L Drum
CAS-ALPEP320-020	Alphasyn EP 320	20L Pail
CAS-ALPEP320-205	Alphasyn EP 320	205L Drum
CAS-ALPEP460-020	Alphasyn EP 460	20L Pail
CAS-ALPEP460-205	Alphasyn EP 460	205L Drum
CAS-ALPEP680-020	Alphasyn EP 680	20L Pail
CAS-ALPEP680-205	Alphasyn EP 680	205L Drum



Castrol Iloform is a process compatible product family with excellent lubrication properties suitable for various metal forming operations such as drawing, stamping and hydroforming, as well as rolling applications.

Product Code	Description	Pack Description
CAS-ILOFORMPN223-020	Iloform PN 223	20L Pail
CAS-ILOFORMPN223-205	Iloform PN 223	205L Drum
CAS-ILOFORMPN224-020	Iloform PN 224	20L Pail
CAS-ILOFORMPN224-205	Iloform PN 224	205L Drum
CAS-ILOFORMTDN81-020	Iloform TDN 81	20L Pail
CAS-ILOFORMTDN81-205	Iloform TDN 81	205L Drum



Castrol Hyspin is a range of high quality mineral oils with a viscosity index improver.

- For modern hydraulic equipment operating under severe service conditions
- Wide temperature range and high pressure
- Suitable for injection moulders, earthmoving hydraulic systems, machine tools, agriculture equipments

Product Code	Description	Pack Description
CAS-HYSAWS010-020	Hyspin AWS 10	20L Pail
CAS-HYSAWS010-205	Hyspin AWS 10	205L Drum
CAS-HYSAWS022-020	Hyspin AWS 22	20L Pail
CAS-HYSAWS022-205	Hyspin AWS 22	205L Drum
CAS-HYSAWS032-020	Hyspin AWS 32	20L Pail
CAS-HYSAWS032-205	Hyspin AWS 32	205L Drum
CAS-HYSAWS046-020	Hyspin AWS 46	20L Pail
CAS-HYSAWS046-205	Hyspin AWS 46	205L Drum
CAS-HYSAWS046-1000	Hyspin AWS 46	1000L IBC
CAS-HYSAWS068-020	Hyspin AWS 68	20L Pail
CAS-HYSAWS068-205	Hyspin AWS 68	205L Drum
CAS-HYSAWS068-1000	Hyspin AWS 68	1000 IBC
CAS-HYSAWS100-020	Hyspin AWS 100	20L Pail
CAS-HYSAWS100-205	Hyspin AWS 100	205L Drum
CAS-HYSAWS150-020	Hyspin AWS 150	20L Pail
CAS-HYSAWS150-205	Hyspin AWS 150	205L Drum
CAS-HYSAWS220-020	Hyspin AWS 220	20L Pail
CAS-HYSAWS220-205	Hyspin AWS220	205L Drum

Hydraulic Oil CASTROL HYSPIN AWH & HYSPIN ZZ

LUBRICANTS, OILS & GREASES



The Castrol Hyspin AWH hydraulic oil with Viscosity Index improver (VI) range is based upon highly refined mineral oil enhanced with a stabilised zinc additive system.

Product Code	Description	Pack Description
CAS-HYSAWH015-020	Hyspin AWH 15	20L Pail
CAS-HYSAWH032-020	Hyspin AWH 32	20L Pail
CAS-HYSAWH046-020	Hyspin AWH 46	20L Pail
CAS-HYSAWH046-205	Hyspin AWH 46	205L Drum
CAS-HYSAWH068-020	Hyspin AWH 68	20L Pail
CAS-HYSAWH068-205	Hyspin AWH 68	205L Drum
CAS-HYSAWH100-020	Hyspin AWH 100	20L Pail

The Castrol Hyspin ZZ hydraulic oil range of lubricants are based on a carefully selected ashless (zinc free) additive system designed to meet and exceed the most exacting performance standards.

Product Code	Description	Pack Description
CAS-HYSZZ032-020ZF	Hyspin ZZ 32	20L Pail
CAS-HYSZZ032-205ZF	Hyspin ZZ 32	205L Drum
CAS-HYSZZ046-020ZF	Hyspin ZZ 46	20L Pail
CAS-HYSZZ046-205ZF	Hyspin ZZ 46	205L Drum
CAS-HYSZZ046-1000ZF	Hyspin ZZ 46	1000L IBC
CAS-HYSZZ068-020ZF	Hyspin ZZ 68	20L Pail
CAS-HYSZZ068-205ZF	Hyspin ZZ 68	205L Drum
CAS-HYSZZ068-1000ZF	Hyspin ZZ 68	1000L IBC
CAS-HYSZZ150-020ZF	Hyspin ZZ 150	20L Pail
CAS-HYSZZ150-205ZF	Hyspin ZZ 150	205L Drum



The Castrol Magnaglide family of oils are high performance, demulsifying, slideway lubricants based on solvent refined mineral oil. These contain very efficient lubricity and extreme pressure additives for effective control of machine tool sliding surfaces.

Product Code	Description	Pack Description
CAS-MAGNASW32-020	Magna SW 32	20L Pail
CAS-MAGNASWD68-020	Magna SW D 68	20L Pail
CAS-MAGNASWD68-205	Magna SW D 68	205L Drum
CAS-MAGNASWD220-020	Magna SW D220	20L Pail
CAS-MAGNASWD220-205	Magna SW D220	205L Drum



Castrol Spheerol is a range of greases which comprises lithium based products, containing highly refined mineral oils, fortified with extreme pressure (EP) additives as well as corrosion and oxidation inhibitors.

Product Code	Description	Pack Description
CAS-SPHEEROLEPL0-0025	Spheerol EPL 0	2.5kg Tub
CAS-SPHEEROLEPL0-020	Spheerol EPL 0	20kg Pail
CAS-SPHEEROLEPL0-175	Spheerol EPL 0	175kg Drum
CAS-SPHEEROLEPL00-020	Spheerol EPL 00	20kg Pail
CAS-SPHEEROLEPL00-175	Spheerol EPL 00	175kg Drum
CAS-SPHEEROLEPL1-020	Spheerol EPL 1	20kg Pail
CAS-SPHEEROLEPL1-180	Spheerol EPL 1	180kg Drum
CAS-SPHEEROLEPL2-0045	Spheerol EPL 2	450g Catridge
CAS-SPHEEROLEPL2-002.5	Spheerol EPL 2	2.5kg Tub
CAS-SPHEEROLEPL2-020	Spheerol EPL 2	20kg Pail
CAS-SPHEEROLEPL2-055	Spheerol EPL 2	55kg Pail
CAS-SPHEEROLEPL2-180	Spheerol EPL 2	180kg Drum
CAS-SPHEEROLEPLX200-2 045	Spheerol EPLX	450g Catridge
CAS-SPHEEROLEPLX200-2 020	Spheerol EPLX	20kg Pail
CAS-SPHEEROLHTB2-0045	Spheerol HTB2	450g Catridge
CAS-SPHEEROLHTB2 020	Spheerol HTB2	20kg Pail
CAS-SPHEEROLLMM-0045	Spheerol LMM	450g Catridge
CAS-SPHEEROLLMM-002.5	Spheerol LMM	2.5kg Tub
CAS-SPHEEROLLMM 020	Spheerol LMM	20kg Pail
CAS-SPHEEROLSBX2-0045	Spheerol SBX2	450g Catridge
CAS-SPHEEROLSBX2-020	Spheerol SBX2	20kg Pail
CAS-SPHEEROLULTRATAK-0045	Spheerol Ultratak 2	450g Catridge
CAS-SPHEEROLULTRATAK2-020	Spheerol Ultratak 2	20kg Pail



Mineral oil, solvent-based and aqueous corrosion preventive fluid with different film characteristics and variable protection times for use on all grades of ferrous and many non-ferrous metal surface. Ideal for protection of machine tools and components prior to storage or transportation.

Product Code	Description	Pack Description
CAS-RUSTILOWDX21-020	Rustilo DWX 21	20L Pail
CAS-RUSTILOWDX22-020	Rustilo DWX 22	20L Pail
CAS-RUSTILOWDX22-205	Rustilo DWX 22	205L Drum
CAS-RUSTILOWDX30-020	Rustilo DWX 30	20L Pail
CAS-RUSTILOWDX30-205	Rustilo DWX 30	205L Drum
CAS-RUSTILOWDX32-020	Rustilo DWX 32	20L Pail
CAS-RUSTILOWDX32-205	Rustilo DWX 32	205L Drum



The Shell Corena range of air compressor oils has been developed to deliver value to your operations through enhanced wear protection, long oil life and high system efficiency.

Product Code	Description	Pack Description
SHEL-COR S2P068 20	Corena S2 P68	20L Pail
SHEL-COR S2P100 20	Corena S2 P100	20L Pail
SHEL-COR S2P150 20	Corena S2 P150	20L Pail
SHEL-COR S3R46 20	Corena S3 R46	20L Pail
SHEL-COR S3R46 209	Corena S3 R46	209L Drum
SHEL-COR S3R68 20	Corena S3 R68	20L Pail
SHEL-COR S4R46 20	Corena S4 R46	20L Pail

Multi Purpose Grease
SHELL GADUS

LUBRICANTS, OILS & GREASES



Shell Gadus is a comprehensive family of greases, that includes multipurpose greases that can help to simplify your product inventory, as well as specific greases, including advanced polyurea synthetic products designed for the most severe extreme-temperature and long-life applications, and a range of open-gear lubricants.

Product Code	Description	Pack Description
SHEL-GAD RAILS2-018	Gadus Rail S Traction Motor	18kg Pail
SHEL-GAD S2 V100 2 .450	Gadus S2 V100 2	450g Cartridge
SHEL-GAD S2 V100 2 18	Gadus S2 V100 2	18kg Pail
SHEL-GAD S2 V100 2 180	Gadus S2 V100 2	180kg Drum
SHEL-GAD S2 V100 3 .450	Gadus S2 V100 3	450g Cartridge
SHEL-GAD S2 V100 3 18	Gadus S2 V100 3	18kg Pail
SHEL-GAD S2 V100 3 180	Gadus S2 V100 3	180kg Drum
SHEL-GAD S2 V220 00 18	Gadus S2 V220 00	18kg Pail
SHEL-GAD S2 V220 0 18	Gadus S2 V220 0	18kg Pail
SHEL-GAD S2 V220 1 18	Gadus S2 V220 1	18kg Pail
SHEL-GAD S2 V220 2 450	Gadus S2 V220 2	450g Cartridge
SHEL-GAD S2 V220 2 18	Gadus S2 V220 2	18kg Pail
SHEL-GAD S2 V220 2 180	Gadus S2 V220 2	180kg Drum
SHEL-GAD S2 V220 AC2 450	Gadus S2 V220 AC2	450g Cartridge
SHEL-GAD S2 V220 AC2 18	Gadus S2 V220 AC2	18kg Pail
SHEL-GAD S2 V220 AC2 180	Gadus S2 V220 AC2	180kg Drum
SHEL-GAD S2 V220 AD 18	Gadus S2 V220 AD2	18kg Pail
SHEL-GAD S2 V220 AD2 450	Gadus S2 V220 AD2	450g Cartridge
SHEL-GAD S2 V1000 AD1.5	Gadus S2 V1000 AD1.5	18kg Pail
SHEL-GAD S2 V1000 AD2.450	Gadus S2 V1000 AD2	450g Cartridge
SHEL-GAD S3 T100 2 .450	Gadus S3 T100 2	450g Cartridge
SHEL-GAD S3 T100 2 18	Gadus S3 T100 2	18kg Pail
SHEL-GAD S3 T220 2 .450	Gadus S3 T220 2	450g Cartridge
SHEL-GAD S3V220C1 018	Gadus S3 V220 C1	18kg Pail
SHEL-GAD S3 V220 C .450	Gadus S3 V220 C2	450g Cartridge
SHEL-GAD S3 V220 C2 18	Gadus S3 V220 C2	18kg Pail
SHEL-GAD S3 V220 C2 180	Gadus S3 V220 C2	180kg Drum
SHEL-GAD S3 V4608-018	Gadus S3 V460 2	18kg Pail
SHEL-GAD S3 V460D-0045	Gadus S3 V460 D2	450g Cartridge
SHEL-GAD S5 T460 1.5 180	Gadus S5 T460 1.5	180kg Drum



Consistent and reliable lubrication, whatever the operating conditions, is key to meet the challenges of a wide range of equipment designs and applications. Shell Morlina offers a portfolio of oils that enables you to choose a product to help match your technical and operational needs.

Product Code	Description	Pack Description
SHEL-MOR S2 BL10 20	Morlina S2 BL10	20L Pail
SHEL-MOR S2 BL10 209	Morlina S2 BL10	209L Drum
SHEL-MOR S2 B150 20	Morlina S2 B150	20L Pail
SHEL-MOR S2 B150 209	Morlina S2 B150	209L Drum
SHEL-MOR S2 B220 020	Morlina S2 B220	20L Pail



The Shell Omala range of industrial gear oils helps you to match oil life to your operational needs. Advanced synthetic oils such as Shell Omala S4WE can offer additional benefits by providing improved energy efficiency compared with conventional oils.

Product Code	Description	Pack Description
SHEL-OMA S2 G 068 20	Omala S2 G 68	20L Pail
SHEL-OMA S2 G 068 209	Omala S2 G 68	209L Drum
SHEL-OMA S2 G 100 20	Omala S2 G 100	20L Pail
SHEL-OMA S2 G 100 209	Omala S2 G 100	209L Drum
SHEL-OMA S2 G 150 20	Omala S2 G 150	20L Pail
SHEL-OMA S2 G 150 209	Omala S2 G 150	209L Drum
SHEL-OMA S2 G 220 20	Omala S2 G 220	20L Pail
SHEL-OMA S2 G 220 209	Omala S2 G 220	209L Drum
SHEL-OMA S2 G 320 20	Omala S2 G 320	20L Pail
SHEL-OMA S2 G 320 209	Omala S2 G 320	209L Drum
SHEL-OMA S2 G 460 20	Omala S2 G 460	20L Pail
SHEL-OMA S2 G 460 209	Omala S2 G 460	209L Drum
SHEL-OMA S2 G 680 20	Omala S2 G 680	20L Pail
SHEL-OMA S2 G 680 209	Omala S2 G 680	209L Drum
SHEL-OMA S2 G 1000 209	Omala S2 G 1000	209L Drum
SHEL-OMA S4 GX 220 20	Omala S4 GX 220	20L Pail
SHEL-OMA S4WE150-020	Omala S4 WE150 Gear Oil	20L Pail
SHEL-OMA S4WE220-020	Omala S4 WE220 Gear Oil	20L Pail
SHEL-OMA S4WE320-020	Omala S4 WE320 Gear Oil	20L Pail



Shell Tellus fluids are high performance hydraulic fluids that use Shell's unique patented technology to provide outstanding protection and performance in most manufacturing and many mobile equipment operations.

Product Code	Description	Pack Description
SHEL-TELLM22 20	Tellus S2 MX 22	20L Pail
SHEL-TELLM22 209	Tellus S2 MX 22	209L Drum
SHEL-TELLM32 20	Tellus S2 MX 32	20L Pail
SHEL-TELLM32 209	Tellus S2 MX 32	209L Drum
SHEL-TELLM46 20	Tellus S2 MX 46	20L Pail
SHEL-TELLM46 209	Tellus S2 MX 46	209L Drum
SHEL-TELLM46 1000	Tellus S2 MX 46	1000L IBC
SHEL-TELLM68 20	Tellus S2 MX 68	20L Pail
SHEL-TELLM68 209	Tellus S2 MX 68	209L Drum
SHEL-TELLM100 20	Tellus S2 MX 100	20L Pail
SHEL-TELLM100 209	Tellus S2 MX 100	209L Drum
SHEL-TELLS2V46 20	Tellus S2 VX46	20L Pail
SHEL-TELLS2VX46 209	Tellus S2 VX46	209L Drum
SHEL-TELLS2V68 20	Tellus S2 VX68	20L Pail
SHEL-TELLS2V68 209	Tellus S2 VX68	209L Drum
SHEL-TELLSM32 20 ZF	Tellus S3 M32	20L Pail
SHEL-TELLSM46 209 ZF	Tellus S3 M46	209L Drum
SHEL-TELLS3M46 1000 ZF	Tellus S3 M46	1000L IBC
SHEL-TELLSM68 209 ZF	Tellus S3 M68	209L Drum
SHEL-TELLME68 209	Tellus S4 ME 68	209L Drum

Premium Slideway Oil
SHELL TONNA



Shell's Tonna Range is especially designed to lubricate machine tool slides, table stand feed mechanisms. With excellent frictional properties, very good slideway adhesion and excellent anti-wear performance, it can be relied on to help provide efficient machining accuracy and reliable protection for your equipment.

Product Code	Description	Pack Description
SHEL-TONS68 20	Tonna S3 M68	20L Pail
SHEL-TONS68 209	Tonna S3 M68	209L Drum
SHEL-TONS220 20	Tonna S3 M220	20L Pail



Shell's Rimula oils provide low wear for long engine life, low deposit formation to maintain engine performance and resist breakdown by heat for continuous protection in demanding applications in mining, construction and quarrying.

Product Code	Description	Pack Description
SHEL-RIM R3+30 20	Rimula R3+30	20L Pail
SHEL-RIM R310W 209	Rimula R3 10W	209L Drum
SHEL-RIM R315W40 209	Rimula R3 x 15W40	209L Drum
SHEL-RIM R4L15W40 20	Rimula R4L15W40	20L Pail
SHEL-RIM R4L15W40 CK4 209	Rimula R4 L15W40 CK4	209L Drum
SHEL-RIM R4X15W40 20	Rimula R4 X15W40	20L Pail
SHEL-RIM R4X15X40 209	Rimula R4X 15W40	209L Drum
SHEL-RIM R6LM10-40 20	Rimula R6LM 10-40	20L Pail



Shell's Spirax oils are blended for use in a wide variety of automotive axle units with limited slip differentials.

Product Code	Description	Pack Description
SHEL-SPI A90 20	Spirax S2 A ALS90	20L Pail
SHEL-SPI S3ATFMD-020	Spirax S3 ATF MD	20L Pail



Water based multipurpose cleaning solution for truck, car and marine applications and heavy duty mining equipment.

Product Code	Description	Pack Description
SHEL-DOB AQUA 020	Dobatex Aqua Degreaser	20L Pail
SHEL-DOB G 004	Dobatex Gold	4L Bottle
SHEL-DOB G 20	Dobatex Gold	20L Pail
SHEL-DOB G 200	Dobatex Gold	200L Drum
SHEL-DOB PLAT 020	Dobatex Platinum	20L Pail



High performance hydraulic fluid, based on the latest base oil and additive technology. The use of an ashless additive pack warrants optimal performance and a long service life

Product Code	Description	Pack Description
MAT-HYDROMAX AW32 20	Hydromax AW32	20 Ltr Pail
MAT-HYDROMAX AW32 205	Hydromax AW32	205 Ltr Drum
MAT-HYDROMAX AW46 20	Hydromax AW46	20 Ltr Pail
MAT-HYDROMAX AW46 205	Hydromax AW46	205 Ltr Drum
MAT-HYDROMAX AW46 1000	Hydromax AW46	1000 Ltr IBC
MAT-HYDROMAX AW68 20	Hydromax AW68	20 Ltr Pail
MAT-HYDROMAX AW68 205	Hydromax AW68	205 Ltr Drum
MAT-HYDROMAX AW68 1000	Hydromax AW68	1000 Ltr IBC
MAT-HYDROMAX ZF 46 205	Hydromax ZF46	205 Ltr Drum
MAT-HYDROMAX ZF 68 205	Hydromax ZF68	205 Ltr Drum

ZF = Zinc Free

Slideway Oil
MATRIX Slidemax

LUBRICANTS, OILS & GREASES



Slidemax are specially compounded oils developed for the lubrication for slides and guide ways. They are specially developed to eliminate the phenomenon of stick-slip in machine tool operation.

Product Code	Description	Pack Description
MAT-SLIDEMAX 68 20	Slidemax 68	20 Ltr Pail



Hales AD1500 is a high performance semi synthetic metalworking coolant designed for the machining of aluminium, steel, copper and brass. It has been formulated for use in soft water as well as hard water, and exhibits low foam and excellent stability under a wide range of conditions. Hales AD1500 offers excellent surface finish and extended tool life, even in difficult operations. Excellent corrosion protection, non-staining to ferrous materials and to aluminium and alloys.

Product Code	Description	Pack Description
HALESAD1500-020	Hales AD 1500	20L Pail
HALESAD1500-200	Hales AD 1500	200L Drum



Hales Ultra 990 is a chlorine and nitrite free, synthetic coolant, specially designed for light to medium duty cutting and grinding of ferrous and non-ferrous metals. It offers improved performance in applications where conventional synthetic coolants are often used, providing enhanced grinding performance, excellent cleanliness, and providing the machining performance to extend its use to most grinding and general machining operations, on cast iron and low to medium tensile steels, aluminium alloys and copper alloys.

Product Code	Description	Pack Description
HALESULTRA-20	Hales Ultra 990	20L Pail
HALESULTRA-200	Hales Ultra 990	200L Drum



Hales MTC50 is specially formulated to deal with the range of contaminants in machine tool systems, using water based coolants. Regular use of MTC50 at fluid changeover time is highly recommended, as the adoption of the simple clean out procedure dramatically reduces coolant related problems, and ensures maximum coolant life. MTC 50 is easy to use, with minimum disruption to production, being added direct to the coolant system whilst still in operation.

Product Code	Description	Pack Description
HALESMTTC50 05	Machine/System Cleaner	5L Pail
HALESMTTC50 20	Machine/System Cleaner	20L Pail



Excellent for the removal of glues and for use as a surface cleaner prior to application of sealant. Acetone can be used for cleaning brushes used in fibreglass resin, varnish and lacquer and as a cleaning agent.

Product Code	Description	Pack Description
HALESACETONE-20	Hales Acetone	20L Pail

Solvent
HALES X55 (Shellite X55)

LUBRICANTS, OILS & GREASES



X55 Solvent is a wide boiling range, rapidly evaporating solvent. It can be used in formulation requiring 'speed of evaporation' and combines well with organic compounds. It also delivers a high solvency of greases and oils.

Product Code	Description	Pack Description
HAESLITEX55 20L	Hales Shelite X55 Solvent	20L Pail
HAESLITEX55 200L	Hales Shelite X55 Solvent	200L Drum

Multi-Purpose Solvent
Kerosene

LUBRICANTS, OILS & GREASES



Kerosene is a light, oily liquid obtained during the distilling of crude oil and is commonly used as heater fuel and degreaser.

Product Code	Description	Pack Description
HALESKERO 20	Hales Kerosene	20L Pail
HALESKERO 200	Hales Kerosene	200L Drum

Denatured Alcohol
Methylated Spirits

LUBRICANTS, OILS & GREASES



Methylated Spirits is a very versatile cleaning agent commonly used as a heavy-duty disinfectant, hard surface cleaner or solvent. It is also a great stain remover for removing ink from non-porous surfaces.

Product Code	Description	Pack Description
HALESMETHO-20	Hales Metho	20L Pail



New generation of technically advanced food grade grease developed by complexing modified over based calcium sulphonates. The new technology offers superior mechanical stability, high temperature, high load carrying performance, reduced wear and excellent resistance to water, steam and corrosion.

Product Code	Description	Pack Description
FM-GREASECASS00HS-18	Foodmax Grease CAS S 00 HS	18kg Pail
FM-GREASECASS1LS-040	Foodmax Grease CAS S1 LS	400g Cartridge
FM-GREASECASS1LS-18	Foodmax Grease CAS S1 LS	18kg Pail
FM-GREASECASS2HS-040	Foodmax Grease CAS S2 HS	400g Cartridge
FM-GREASECASS2HS-040SL	Foodmax Grease CAS S2 HS	400g Shuttle
FM-GREASECASS2HS-18	Foodmax Grease CAS S2 HS	18kg Pail
FM-GREASECASS2LS-040	Foodmax Grease CAS S2 LS	400g Cartridge
FM-GREASECASS2LS-18	Foodmax Grease CAS S2 LS	18kg Pail



Food grade lubricating grease suitable for the lubrication of a wide range of applications including plain and rolling element bearings in the slaughter houses, canning and bottle factories or any other food processing plants. Works well in the lubrication of plastic components and O-rings.

Product Code	Description	Pack Description
FM-CLEAR2GREASELS-040SL	Foodmax Clear 2 Grease	400g Shuttle



Foodmax Grease ASP 2 is an aluminium complex grease designed for the lubrication of almost any type of application which requires a food grade lubricant. Superior resistance to water, is very suitable for the lubrication of chains operated in very wet conditions such as food conveyor chains.

Product Code	Description	Pack Description
FM-GREASEASP2-040	Foodmax Grease ASP 2	400g Cartridge
FM-GREASEASP2-018	Foodmax Grease ASP 2	18kg Pail



Foodmax Grease SI is a range of adherent silicone based grease for the lubrication of valves and taps, available in different grades for several applications. Long lifetime and perfect water insolubility, it extends the working life and reduces the wear of ceramic disks.

Product Code	Description	Pack Description
FM-GREASEASI3-040	Foodmax Grease SI 3	400gm
FM-GREASEASI3-018	Foodmax Grease SI 3	18kg Pail



- Formulated using specially selected, highly refined base stock in combination with the latest additive technology
- Excellent anti wear properties
- Use for both power and motion transfer in machinery operated close to food production processes.

Product Code	Description	Pack Description
FM-AWHYDRA22-020	Foodmax AW Hydra 22	20L Pail
FM-AWHYDRA46-020	Foodmax AW Hydra 46	20L Pail
FM-AWHYDRA46-210	Foodmax AW Hydra 46	210 Drum
FM-AWHYDRA68-020	Foodmax AW Hydra 68	20L Pail
FM-AWHYDRA68-210	Foodmax AW Hydra 68	210L Drum
FM-AWHYDRAPAO32-20	Foodmax AW PAO Hydra 32	20L Pail
FM-AWHYDRAPAO46-20	Foodmax AW PAO Hydra 46	20L Pail
FM-AWHYDRAPAO68-20	Foodmax AW PAO Hydra 68	20L Pail

Food Grade Lubricating White Paraffine Oil
FOODMAX Basic

LUBRICANTS, OILS & GREASES



- Can be used in the authorised industrial operations whenever there is the possibility of food contact.
- Perform well as dough divider oil
- Lubricant for cutters, knives, conveyors and rollers in packaging equipments.
- Suitable for use as an anti-corrosive for food processing machines

Product Code	Description	Pack Description
FM-BASIC015-020	Foodmax Basic 15	20L Pail
FM-BASIC032-020	Foodmax Basic 32	20L Pail

Food Grade Chain/Slide Way Oil
FOODMAX Chain

LUBRICANTS, OILS & GREASES



- Fully synthetic
- Adhesive fluids for the lubrication of drive chains, conveyor chains and slide ways
- Special additives extend relubrication intervals significantly
- Non-drip, no fling characteristics
- Also available, Chain HT-X (hi-temp) and Chain LT (low temp).

Product Code	Description	Pack Description
FM-CHAIN068-020	Foodmax Chain 68	20L Pail
FM-CHAIN068-210	Foodmax Chain 68	210L Drum
FM-CHAIN150-020	Foodmax Chain 150	20L Pail
FM-CHAIN220-020	Foodmax Chain 220	20L Pail
FM-CHAIN220-210	Foodmax Chain 220	210L Drum
FM-CHAINHTX-020	Foodmax Chain HT-X 20L	20L Pail



- Using the latest base stock technology together with a special additive package
- High performance food grade gear oil
- Also available in PAO and PAG synthetic

Product Code	Description	Pack Description
FM-GEAR220-020	Foodmax Gear 220	20L Pail
FM-GEAR320-020	Foodmax Gear 320	20L Pail
FM-GEAR460-020	Foodmax Gear 460	20L Pail
FM-GEAR680-020	Foodmax Gear 680	20L Pail
FM-GEARPAG150-020	Foodmax Gear PAG 150	20L Pail
FM-GEARPAG220-020	Foodmax Gear PAG 220	20L Pail
FM-GEARPAG320-020	Foodmax Gear PAG 320	20L Pail
FM-GEARPAG460-020	Foodmax Gear PAG 460	20L Pail
FM-GEARPAG680-020	Foodmax Gear PAG 680	20L Pail
FM-GEARPAO100-020	Foodmax Gear PAO 100	20L Pail
FM-GEARPAO150-020	Foodmax Gear PAO 150	20L Pail
FM-GEARPAO220-020	Foodmax Gear PAO 220	20L Pail
FM-GEARPAO320-020	Foodmax Gear PAO 320	20L Pail
FM-GEARPAO460-020	Foodmax Gear PAO 460	20L Pail
FM-GEARPAO680-020	Foodmax Gear PAO 680	20L Pail



- Food safe lubricant specially developed for use on chains, sliding surfaces and moulds where build-up of sugar is seen and eventually causes problems.
- Cleans, removes sugar build-up
- Lubricates and prevents from corrosion and new sugar accumulation

Product Code	Description	Pack Description
FM-MAMMUT25-020	Foodmax Mammut 25	20L Pail



- White, non-toxic, grease like compound
- Designed for use as an assembly lubricant for lubricating bushes, sliding surfaces and small open plastic or metal gears and anti-seize compound for threaded fasteners.
- To prevent damage during start up and protect against premature wear during the running-in period

Product Code	Description	Pack Description
FM-ASSEMBLYPASTE-0125	Foodmax Assembly Paste	125gm Tube
FM-ASSEMBLYPASTE-003	Foodmax Assembly Paste	3kg Tub



Foodmax DWF spray is a non-toxic lubricating, penetrating and de-watering lubricant and is ideal for use on lightly loaded chains, bearings and slides in food and clean environments. Working temperature -30 °C to 145 °C.

Product Code	Description	Pack Size
FM-DWFSPRAY-040	Foodmax DWF Spray	400g Aerosol

Food Grade Silicone Spray
Foodmax Silicone Spray

LUBRICANTS, OILS & GREASES



A food grade, silicone based, anti-adherent and lubricating fluid with a very high temperature resistance. Great for packaging transport lines and for low load applications. Also suitable as anti adherent for any type of equipment, demoulding of all type of plastics and rubbers and surface polisher.

Product Code	Description	Pack Size
FM-SILICONESPRAY-040	Foodmax Silicone Spray	400g Aerosol

Food Grade Grease CAS Spray
Foodmax Grease CAS

LUBRICANTS, OILS & GREASES



H-1 approved for use in food processing equipment where incidental contact with food may occur. They are designed to provide superior performance at low and elevated temperatures (-40°C~200°C) and during periods of infrequent lubrication in food processing applications. Foodmax Grease CAS can be used for general lubrication, slide ways, chains and high load bearings in the food industry.

Product Code	Description	Pack Size
FM-CASSPRAY-040	Foodmax Grease CAS Spray	400g Aerosol

Food Grade Lubricating White Oil Spray
Foodmax Easy Spray

LUBRICANTS, OILS & GREASES



Foodmax Easy Spray can be used as a general lubricant as a non sticky chain oil, bearings and slides with low load, a food grade mould release, hinges and as a cleaning and conserving agent for stainless steel. Foodmax Easy Spray can be used as a food grade mould release oil as well.

Product Code	Description	Pack Size
FM-EASYSpray-040	Foodmax Easy Spray	400g Aerosol



Foodmax Clean Spray is a food grade cleaner degreaser. This non-toxic formulation has been formulated to effectively clean grease and oil residue, formulated from a citrus oil derivative which is non-toxic, non-caustic, biodegradable and can be used safely with minimal protective equipment.

Product Code	Description	Pack Size
FM-CLEANSpray-040	Foodmax Clean Spray	400g Aerosol



Foodmax Multi Spray is a totally waterproof tacky chain spray that contains food grade synthetic fluid and PTFE lubricant that endures aggressive environments and create a strong shear-stable lubrication film. Suitable for a broad range of applications including chains, conveyers, slides, joints, etc.

Product Code	Description	Pack Size
FM-MULTISPRAY-040	Foodmax Multi Spray	400g Aerosol



Foodmax Clean E spray is a powerful, fast drying cleaner, ideal for cleaning electronic equipment and components in and around food processing areas, such as control panels, electric motors, electrical contacts and switches.

Product Code	Description	Pack Size
FM-CLEANESPRAY-040	Foodmax Clean E Spray	400g Aerosol



Foodmax TFD Spray is a clean, non-toxic, non-staining and semi-dry lubricant fortified with PTFE. Provides excellent low friction properties and reduces static. Designed for repetitive movement applications in environments where a non-sticky lubricant is required. Suitable for use in food, chemical and printing industry as well as other industries requiring a clean lubricant. Temperatures range (-20°C~120°C)

Product Code	Description	Pack Size
FM-TFDSPRAY-040	Foodmax TFD Spray	400g Aerosol



The ultimate PTFE paste for the assembly of injection mould tools, it also provides excellent anti seize on many types of moving parts.

Product Code	Description	Pack Size
PROLON-250	PTFE 901 Paste	ProLon 250g Tube
PROLON-500G	PTFE 901 Paste	ProLon 500ml Tub
PROLON-20KG	PTFE 901 Paste	ProLon 20kg Tub

Performance X3

LUBRICANTS, OILS & GREASES



Performance X3 utilises a blend of synthetic fluids to transport M-FLON to critical bearing surfaces protecting them from wear and corrosion.

Applications:

- Lubricates and protects chains cables slides
- Protects against corrosion
- Penetrates and frees seized components
- Removes residues from old lubricants

Product Code	Description	Pack Size
MAT-PERFORM-X3 040	Performance X3 Spray	500ml Aerosol

CRC 5.56 Multi Purpose Fluid

LUBRICANTS, OILS & GREASES



The professionals choice. CRC 5.56 multipurpose product has superior penetrating power, that breaks through rust and corrosion while it cleans away scale and dirt.

Also available in 175gm, 500m, 1litre, 200 litres

Product Code	Description	Pack Size
CRC-5.56CAN	CRC Multi-Purpose Spray	400g Aerosol
CRC-5.564LT	CRC Multi-Purpose Fluid	4 Litre
CRC-5.5620LT	CRC Multi-Purpose Fluid	20 Litre Drum

Zap-Ox Cleaner

LUBRICANTS, OILS & GREASES



Zap-Ox Stain Remover.
Removes all rust, oxidation, buildup, stains, weld discoloration and more.

Product Code	Description	Pack Size
NANO-ZO-16	Zap-Ox Cleaner	475ml Bottle



Extremely good absorption ability and capacity for all types of organic fluids, i.e. motor oils, hydraulic oils, gear oils, organic solvents, diesel oil, petrol, etc.

Product Code	Size	Pack Qty
FG-OILSHEET 100	40cm x 50cm	100 Sheets



All purpose spill absorber, made from 100% absorbant granules which are effective at absorbing spills and liquids.

Environmentally safe and easy to use 20kg bags.

Product Code	Pack Description
Halesabsorbclay	20 KG



One hand grease gun with zinc plated steel barrel to suit 400g shuttle type cartridges, and a ergonomically designed pistol grip. Fast and clean loading and unloading without opening the gun, eliminating any contamination.

Product Code	Description
FG-LUBESHUTTLEGUN	Foodgrade Lubeshuttle Grease Gun

Ergonomic Side Lever Food Industry
Grease Gun With Hose

LUBRICANTS, OILS & GREASES



Two hand grease guns features a high quality zinc plated steel barrel body and an ergonomic hand grip to suit 400g shuttle type cartridges. Fast and clean loading and unloading without opening the gun, eliminating any contamination.

Product Code	Description
FG-2HLUBESHUTTLEGUN	Foodgrade Lubeshuttle Grease Gun

20 Litre Food Grade Drum Pump
Ezy-Action Drum Pump

LUBRICANTS, OILS & GREASES



Ezy-Action food grade hand -operated piston pump is made of polypropylene for resistance to chemicals, dispenses liquids at a rate of 15oz. per stroke, and is suitable for dispensing viscous fluids, hard acids, or alkali cleaning chemicals.

Product Code	Description
FG-PLASTICPUMP-025	Foodgrade Plastic Pump 25Lt

Drum Pump Pail Adapter
Adaptor Fitting

LUBRICANTS, OILS & GREASES



Used to secure and lock the Ezy-Action drum pump into the pail.

Product Code	Description
FG-DRUMADAPTOR	White / Black Plastic Adapter



A classic grease gun that incorporates a unique variable stroke piston and valve arrangement for true one handed operation and can produce increased pressure through short strokes or high volume shot using a full stroke. Pistol-grip design to suit 450g grease cartridges, bulk filling or J3 grease transfer pump loading.

Product Code	Description
LA-K2901	Pistol Grip Grease Gun 450G



A lever-action grease gun designed for high pressure / high volume greasing and can easily clear blocked or damaged grease nipples. The grease gun features a durable die cast aluminium head, a heavy gauge steel barrel and a heavy duty follower assembly to handle a wide range of grease viscosities. Suits 450g grease cartridges, bulk filling or MacNaught J3 transfer loading.

Product Code	Description
LA-K4501	Lever Grease Gun 450G



The 20kg grease pump is suitable for bulk filling of manual or electric hand grease guns. With a durable cast aluminium alloy pump outlet body, it allows for the fast reload of grease guns, taking less than a minute. The nipple allows bulk fill to valve with diameters of 9mm and 12.5mm. Comes standard with a Rubber follower plate.

Product Code	Description
LA-DG93411	Manual Grease Pump 20kg



The complete set of fluid transfer accessories gives the end user a trouble-free using experience. The standard model is composed of 50:1 pump, trolley, follower plate and drum over, 4 meter of 1/4" connection hose, 'Z' swivel and control gun with a working pressure of up to 8700psi.

Product Code	Description
LA-DIT1700512	Air Operated Grease Pump 20kg



Designed for dispensing most service fluids including engine, gear, transmission, hydraulic and some engine coolants from 20L - 25L drums. An extendable suction tube and two additional bung adaptors ensure that the expanding range of different size and types of drums are easily catered for. An extra-long clear delivery hose gives easy identification of the fluid type and allows better reach into difficult areas.

Product Code	Description
LA-MAOP20	Drum Pump 20Ltre

60L or 205L Drum Pump
Lever Action Barrel Pump



The Lever Action Barrel Pump is a telescopic suction tube for either 60L or 205L drums. Comes with 1 - 1/2" & 2" bung adaptors. Can pump up to 500ml per stroke, depending on viscosity. Wetted materials: steel, aluminium, zinc, brass, NBR, viton and suitable for lubricating oils and service fluids.

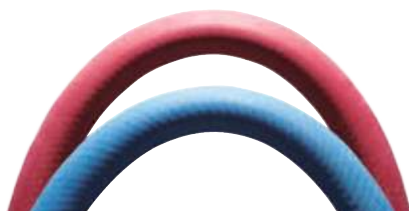
Product Code	Description
LA-LLBP	Lever Barrel Pump 205Ltr

Rotary Pump



Rotary pumps offer easy self-priming and ability to deliver in both directions. For both 60 & 205L drums.

Product Code	Description
LA-LRPH	Rotary Pump



G Series:

Working Pressure: 15 Bar
 Burst Pressure: 60 Bar
 Working Temperature: +100°C
 Roll Length: 50M
 Crimping Service: Hose crimped to order.

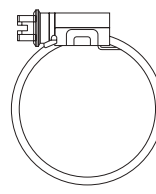
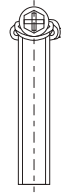
Product Code	Hose ID	OD	Colour
HOSE-G10B	10	16.5	Blue
HOSE-G10R	10	16.5	Red
HOSE-G13B	13	21	Blue
HOSE-G13R	13	21	Red
HOSE-G19B	19	27	Blue
HOSE-G19R	19	27	Red



E Series:

Working Pressure: 15 Bar
 Burst Pressure: 60 Bar
 Working Temperature: +140°C
 Roll Length: 50M
 Crimping Service: Hose crimped to order.

Product Code	Hose ID	OD	Colour
HOSE-E10B	10	16.5	Blue
HOSE-E10R	10	16.5	Red
HOSE-E13B	13	21	Blue
HOSE-E13R	13	21	Red



Manufactured using a solid stainless steel band with a rolled edge and smooth underside to prevent hose damage and deliver high strength for superior sealing.

Product Code	Size	Pack Qty
HC0816-PKT	6mm - 16mm	10 pcs
HC1320-PKT	13mm - 20mm	10 pcs
HC1524-PKT	15mm - 24mm	10 pcs
HC2238-PKT	22mm - 38mm	10 pcs

Teflon Tape

CONNECTOR FITTINGS AND HOSE



Product Code	Description	Pack Qty
TEF	1/2' Teflon Tape	10 pcs



Product Code	Description
TFP3-31618	3/16 Hose Tail x 1/8 Male BSP
TFP3-31614	3/16 Hose Tail x 1/4 Male BSP
TFP3-1418	1/4 Hose Tail x 1/8 Male BSP
TFP3-1414	1/4 Hose Tail x 1/4 Male BSP
TFP3-1438	1/4 Hose Tail x 3/8 Male BSP
TFP3-1412	1/4 Hose Tail x 1/2 Male BSP
TFP3-51618	5/16 Hose Tail x 1/8 Male BSP
TFP3-51614	5/16 Hose Tail x 1/4 Male BSP
TFP3-51638	5/16 Hose Tail x 3/8 Male BSP
TFP3-51612	5/16 Hose Tail x 1/2 Male BSP
TFP3-3818	3/8 Hose Tail x 1/8 Male BSP
TFP3-3814	3/8 Hose Tail x 1/4 Male BSP
TFP3-3838	3/8 Hose Tail x 3/8 Male BSP
TFP3-3812	3/8 Hose Tail x 1/2 Male BSP
TFP3-3834	3/8 Hose Tail x 3/4 Male BSP
TFP3-1218	1/2 Hose Tail x 1/8 Male BSP
TFP3-1214	1/2 Hose Tail x 1/4 Male BSP
TFP3-1238	1/2 Hose Tail x 3/8 Male BSP
TFP3-1212	1/2 Hose Tail x 1/2 Male BSP
TFP3-1234	1/2 Hose Tail x 3/4 Male BSP
TFP3-3438	3/4 Hose Tail x 3/8 Male BSP
TFP3-3412	3/4 Hose Tail x 1/2 Male BSP
TFP3-3410	3/4 Hose Tail x 1" Male BSP
TFP3-1034	1" Hose Tail x 3/4 Male BSP
TFP3-1010	1" Hose Tail x 1" Male BSP



Product Code	Description
TFP10-3814	3/8 Tail 1/4 Female BSP
TFP10-1214	1/2 Tail 1/4 Female BSP
TFP10-1238	1/2 Tail 3/8 Female BSP
TFP10-1212	1/2 Tail 1/2 Female BSP



Product Code	Description
TFP7-316	3/16 Hose Joiner
TFP7-14	1/4 Hose Joiner
TFP7-516	5/16 Hose Joiner
TFP7-38	3/8 Hose Joiner
TFP7-12	1/2 Hose Joiner
TFP7-34	3/4 Hose Joiner

3-Way Tee Hose Joiner

CONNECTOR FITTINGS AND HOSE



Product Code	Description
TFP14-316	3/16 3-Way Tee Hose Joiner
TFP14-14	1/4 3-Way Tee Hose Joiner
TFP14-516	5/16 3-Way Tee Hose Joiner
TFP14-38	3/8 3-Way Tee Hose Joiner
TFP14-12	1/2 3-Way Tee Hose Joiner
TFP14-34	3/4 3-Way Tee Hose Joiner

Male Hexagonal Nipples

CONNECTOR FITTINGS AND HOSE



Product Code	Description
TF27-18	1/8 Male BSP Hexagonal Nipple
TF27-14	1/4 Male BSP Hexagonal Nipple
TF27-38	3/8 Male BSP Hexagonal Nipple
TF27-12	1/2 Male BSP Hexagonal Nipple
TF27-34	3/4 Male BSP Hexagonal Nipple
TF27-10	1" Male BSP Hexagonal Nipple



Product Code	Description
TF72-1818	1/8F x 1/8M Female to Male BSP Adaptor
TF72-1418	1/4F x 1/8M Female to Male BSP Adaptor
TF72-1414	1/4F x 1/4M Female to Male BSP Adaptor
TF72-3814	3/8F x 1/4M Female to Male BSP Adaptor
TF72-3838	3/8F x 3/8M Female to Male BSP Adaptor
TF72-1214	1/2F x 1/4M Female to Male BSP Adaptor
TF72-1238	1/2F x 3/8M Female to Male BSP Adaptor
TF72-1212	1/2F x 1/2M Female to Male BSP Adaptor
TF72-3412	3/4F x 1/2M Female to Male BSP Adaptor



Product Code	Description
TF24-1418	1/8M x 1/4 F Male to Female Reducing Bush
TF24-3838	3/8M x 3/8F Male to Female Reducing Bush
TF24-3814	3/8M x 1/4F Male to Female Reducing Bush
TF24-1214	1/2M x 1/4F Male to Female Reducing Bush
TF24-1238	1/2M x 3/8F Male to Female Reducing Bush
TF24-3414	3/4M x 1/4F Male to Female Reducing Bush
TF24-3438	3/4M x 3/8F Male to Female Reducing Bush
TF24-3412	3/4M x 1/2F Male to Female Reducing Bush
TF24-1012	1"M x 1/2F Male to Female Reducing Bush
TF24-1034	1"M x 3/4F Male to Female Reducing Bush



Product Code	Description
TF26-18	1/8 Female Hexagonal Socket
TF26-14	1/4 Female Hexagonal Socket
TF26-38	3/8 Female Hexagonal Socket
TF26-12	1/2 Female Hexagonal Socket
TF26-34	3/4 Female Hexagonal Socket

Male to Male Reducing Nipples

CONNECTOR FITTINGS AND HOSE



Product Code	Description
TF73-1418	1/4M - 1/8M Male to Male Reducing Nipple
TF73-3818	3/8M - 1/8M Male to Male Reducing Nipple
TF73-3814	3/8M - 1/4M Male to Male Reducing Nipple
TF73-1214	1/2M - 1/4M Male to Male Reducing Nipple
TF73-1238	1/2M - 3/8M Male to Male Reducing Nipple
TF73-3438	3/4M - 3/8M Male to Male Reducing Nipple
TF73-3412	3/4M - 1/2M Male to Male Reducing Nipple

Male to Male 90° Elbow

CONNECTOR FITTINGS AND HOSE



Male to Male

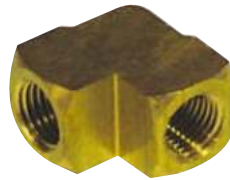


Reducing Type

Product Code	Description
TF48-1818	1/8M - 1/8M Male to Male 90° Elbow
TF48-1414	1/4M x 1/4M Male to Male 90° Elbow
TF48-3838	3/8M x 3/8M Male to Male 90° Elbow
TF48-3814	3/8M x 1/4M Male to Male 90° Elbow



Product Code	Description
TF50-14	1/4 3-Way Male BSP Tee



Product Code	Description
TF34-18	1/8 Female 90° Elbow
TF34-14	1/4 Female 90° Elbow
TF34-38	3/8 Female 90° Elbow
TF34-12	1/2 Female 90° Elbow
TF34-34	3/4 Female 90° Elbow



Product Code	Description
TF35-18	1/8 Female BSP Tee
TF35-14	1/4 Female BSP Tee
TF35-38	3/8 Female BSP Tee
TF35-12	1/2 Female BSP Tee
TF35-34	3/4 Female BSP Tee



Product Code	Description
TF37-14	1/4 Female BSP Cross

Male to Female 45° Elbow

CONNECTOR FITTINGS AND HOSE



Product Code	Description
TF25E-18-45	1/8 Male to Female 45° Elbow
TF25E-14-45	1/4 Male to Female 45° Elbow
TF25E-38-45	3/8 Male to Female 45° Elbow
TF25E-12-45	1/2 Male to Female 45° Elbow

Male to Female 90° Elbow

CONNECTOR FITTINGS AND HOSE



Product Code	Description
TF25E-18-90	1/8 Male to Female 90° Elbow
TF25E-14-90	1/4 Male to Female 90° Elbow
TF25E-38-90	3/8 Male to Female 90° Elbow
TF25E-12-90	1/2 Male to Female 90° Elbow



Product Code	Description
TF64-18	1/8 BSP Taper Plug
TF64-14	1/4 BSP Taper Plug
TF64-38	3/8 BSP Taper Plug
TF64-12	1/2 BSP Taper Plug
TF64-34	3/4 BSP Taper Plug
TF64-10	1" BSP Taper Plug



Product Code	Description
TF33-18	1/8 Female BSP End Cap
TF33-14	1/4 Female BSP End Cap
TF33-38	3/8 Female BSP End Cap
TF33-12	1/2 Female BSP End Cap
TF33-34	3/4 Female BSP End Cap
TF33-10	1" Female BSP End Cap



BSPT Brass/Stainless		
Product Code	Size	Height
PP10	1/8	0.250
PP20	1/4	0.406
PP40	3/8	0.406
PP60	1/2	0.531
PP80	3/4	0.531
PP100	1	0.656

NPT Brass		
Product Code	Size	Height
CBP05	1/16	0.254
CBP10	1/8	0.250
CBP20	1/4	0.406
CBP40	3/8	0.406
CBP60	1/2	0.531
CBP80	3/4	0.531
CBP100	1	61/93



Product Code	Description
TF310-M2	310-Series Coupler with 1/8 Male BSP Thread
TF310-M4	310-Series Coupler with 1/4 Male BSP Thread
TF310-M6	310-Series Coupler with 3/8 Male BSP Thread
TF310-M8	310-Series Coupler with 1/2 Male BSP Thread



Product Code	Description
TF310-F4	310-Series Coupler with 1/4 Female BSP Thread
TF310-F6	310-Series Coupler with 3/8 Female BSP Thread
TF310-F8	310-Series Coupler with 1/2 Female BSP Thread



Product Code	Description
TF310-T4	310-Series Coupler with 1/4 Hose Tail
TF310-T6	310-Series Coupler with 3/8 Hose Tail
TF310-T8	310-Series Coupler with 1/2 Hose Tail



Product Code	Description
TF31-M2	310-Series Snap On with 1/8 Male BSP Thread
TF31-M4	310-Series Snap On with 1/4 Male BSP Thread
TF31-M6	310-Series Snap On with 3/8 Male BSP Thread
TF31-M8	310-Series Snap On with 1/2 Male BSP Thread



Product Code	Description
TF31-F4	310-Series Snap On with 1/4 Female BSP Thread
TF31-F6	310-Series Snap On with 3/8 Female BSP Thread



Product Code	Description
TF31T8	310-Series Snap On with 1/2 Hose Tail



Product Code	Description	Colour
PU0425-200-B	4mm Polyurethane Hose	Black
PU0425-200-U	4mm Polyurethane Hose	Blue
PU0530-200-U	5mm Polyurethane Hose	Blue
PU0604-200-B	6mm Polyurethane Hose	Black
PU0604-200-U	6mm Polyurethane Hose	Blue
PU0805-100-B	8mm Polyurethane Hose	Black
PU0805-100-U	8mm Polyurethane Hose	Blue
PU1065-100-B	10mm Polyurethane Hose	Black
PU1065-100-U	10mm Polyurethane Hose	Blue
PU1208-100-B	12mm Polyurethane Hose	Black
PU1208-100-U	12mm Polyurethane Hose	Blue



Product Code	Description
PC-04-01	4mm x 1/8 BSPT Threaded Straight Push Fitting
PC-04-02	4mm x 1/4 BSPT Threaded Straight Push Fitting
PC-05-01	5mm x 1/8 BSPT Threaded Straight Push Fitting
PC-05-02	5mm x 1/4 BSPT Threaded Straight Push Fitting
PC-06-01	6mm x 1/8 BSPT Threaded Straight Push Fitting
PC-06-02	6mm x 1/4 BSPT Threaded Straight Push Fitting
PC-08-01	8mm x 1/8 BSPT Threaded Straight Push Fitting
PC-08-02	8mm x 1/4 BSPT Threaded Straight Push Fitting
PC-10-02	10mm x 1/4 BSPT Threaded Straight Push Fitting
PC-12-02	12mm x 1/4 BSPT Threaded Straight Push Fitting



Product Code	Description
PL-04-01	4mm x 1/8 BSPT Threaded 90° Push Fitting
PL-04-02	4mm x 1/4 BSPT Threaded 90° Push Fitting
PL-05-01	5mm x 1/8 BSPT Threaded 90° Push Fitting
PL-05-02	5mm x 1/4 BSPT Threaded 90° Push Fitting
PL-06-01	6mm x 1/8 BSPT Threaded 90° Push Fitting
PL-06-02	6mm x 1/4 BSPT Threaded 90° Push Fitting
PL-08-01	8mm x 1/8 BSPT Threaded 90° Push Fitting
PL-08-02	8mm x 1/4 BSPT Threaded 90° Push Fitting
PL-10-02	10mm x 1/4 BSPT Threaded 90° Push Fitting
PL-12-02	12mm x 1/4 BSPT Threaded 90° Push Fitting



Product Code	Description
PB-4-01	4mm x 1/8 BSPT Threaded Tee Push Fitting
PB-4-02	4mm x 1/4 BSPT Threaded Tee Push Fitting
PB-5-01	5mm x 1/8 BSPT Threaded Tee Push Fitting
PB-5-02	5mm x 1/4 BSPT Threaded Tee Push Fitting
PB-6-01	6mm x 1/8 BSPT Threaded Tee Push Fitting
PB-6-02	6mm x 1/4 BSPT Threaded Tee Push Fitting
PB-8-01	8mm x 1/8 BSPT Threaded Tee Push Fitting
PB-8-02	8mm x 1/4 BSPT Threaded Tee Push Fitting



Product Code	Description
PU-04	4mm Push-In Tube Connector
PU-06	6mm Push-In Tube Connector
PU-08	8mm Push-In Tube Connector
PU-10	10mm Push-In Tube Connector
PU-12	12mm Push-In Tube Connector



Product Code	Description
PVM-04	4mm Push-In Tube Elbow
PVM-06	6mm Push-In Tube Elbow
PVM-08	8mm Push-In Tube Elbow
PVM-10	10mm Push-In Tube Elbow
PVM-12	12mm Push-In Tube Elbow



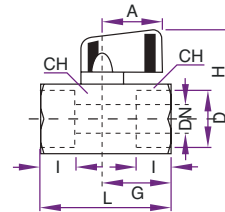
Product Code	Description
PE-04	4mm O.D. Tube Push Fitting
PE-05	5mm O.D. Tube Push Fitting
PE-06	6mm O.D. Tube Push Fitting
PE-08	8mm O.D. Tube Push Fitting



Product Code	Description
PY-04	4mm O.D. Y Push Fitting
PY-05	5mm O.D. Y Push Fitting
PY-06	6mm O.D. Y Push Fitting
PY-08	8mm O.D. Y Push Fitting

Mini Ball Valve - Female / Female

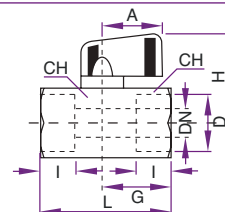
CONNECTOR FITTINGS AND HOSE



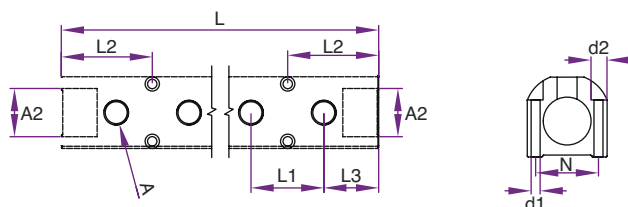
Part No.	Part No.	D	DN	I	L	G	A	H	CH
VM02R	VM02B	1/8"	6	10	41,5	22	22,5	31	21
VM04R	VM04B	1/4"	8	11	41,5	22	22,5	31	21
VM06R	VM06B	3/8"	8	11	41,5	22	22,5	31	21
VM08R	VM08B	1/2"	10	13	49	26	22,5	31	25

Mini Ball Valve - Male / Female

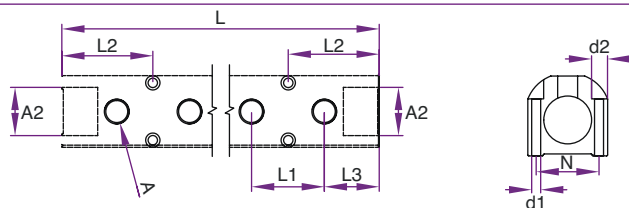
CONNECTOR FITTINGS AND HOSE



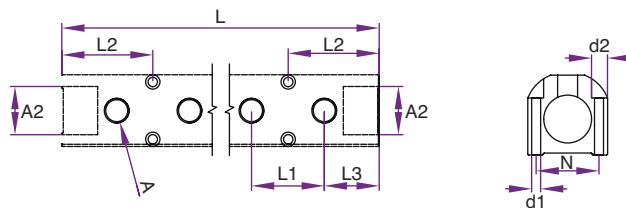
Part No.	Part No.	D	DN	I	L	G	A	H	CH
VMMF02R	VMMF02B	1/8"	5	10	41,5	22	22,5	31	21
VMMF04R	VMMF04B	1/4"	8	11	41,5	22	22,5	31	21
VMMF06R	VMMF06B	3/8"	8	11	41,5	22	22,5	31	21
VMMF08R	VMMF08B	1/2"	10	13	49	22	22,5	31	25



Part No.	Colour	Ports	A(BSPP)	A2(BSPP)	L2	L3	L1	d1	d2	N	L
IM3-4-1/4-R		4	1/4"	3/4"	57,2	38,1	38,1	4,5	8	31	109,5
IM3-4-1/4-B		4	1/4"	3/4"	57,2	38,1	38,1	4,5	8	31	190,5
IM3-6-1/4-R		6	1/4"	3/4"	57,2	38,1	38,1	4,5	8	31	266,7
IM3-6-1/4-B		6	1/4"	3/4"	57,2	38,1	38,1	4,5	8	31	266,7
IM3-8-1/4-R		8	1/4"	3/4"	57,2	38,1	38,1	4,5	8	31	342,9
IM3-8-1/4-B		8	1/4"	3/4"	57,2	38,1	38,1	4,5	8	31	342,9



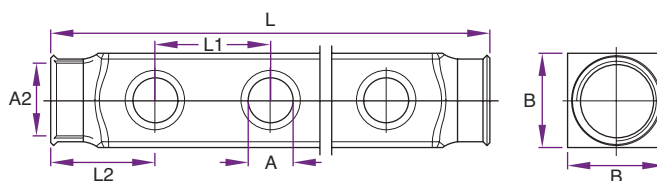
Part No.	Colour	Ports	A(BSPP)	A2(BSPP)	L2	L3	L1	d1	d2	N	L
IM4-4-1/4-R		4	1/4"	1"	63,5	38,1	38,1	7	10,5	40,6	190,5
IM4-4-1/4-B		4	1/4"	1"	63,5	38,1	38,1	7	10,5	40,6	190,5
IM4-4-3/8-R		4	3/8"	1"	63,5	38,1	38,1	7	10,5	40,6	228,6
IM4-4-3/8-B		4	3/8"	1"	63,5	38,1	38,1	7	10,5	40,6	228,6
IM4-6-1/4-R		6	1/4"	1"	63,5	38,1	38,1	7	10,5	40,6	226,7
IM4-6-1/4-B		6	1/4"	1"	63,5	38,1	38,1	7	10,5	40,6	226,7
IM4-6-3/8-R		6	3/8"	1"	63,5	38,1	38,1	7	10,5	40,6	330,2
IM4-6-3/8-B		6	3/8"	1"	63,5	38,1	38,1	7	10,5	40,6	330,2
IM4-8-1/4-R		8	1/4"	1"	63,5	38,1	38,1	7	10,5	40,6	342,9
IM4-8-1/4-B		8	1/4"	1"	63,5	38,1	38,1	7	10,5	40,6	342,9
IM4-8-3/8-R		8	3/8"	1"	63,5	38,1	38,1	7	10,5	40,6	431,8
IM4-8-3/8-B		8	3/8"	1"	63,5	38,1	38,1	7	10,5	40,6	431,8
IM4-10-3/8-R		10	3/8"	1"	63,5	38,1	38,1	7	10,5	40,6	533,4
IM4-10-3/8-B		10	3/8"	1"	63,5	38,1	38,1	7	10,5	40,6	533,4
IM4-12-3/8-R		12	3/8"	1"	63,5	38,1	38,1	7	10,5	40,6	635
IM4-12-3/8-B		12	3/8"	1"	63,5	38,1	38,1	7	10,5	40,6	635



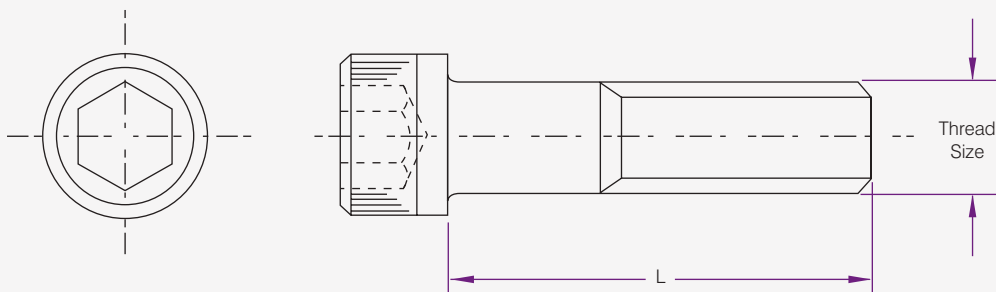
Part No.	Colour	Ports	A(BSPP)	A2(BSPP)	L2	L3	L1	d1	d2	N	L
IM6-4-1/2-R		4	1/2"	1-1/2"	76,2	50,8	50,8	7	10,5	57	254
IM6-4-1/2-B		4	1/2"	1-1/2"	76,2	50,8	50,8	7	10,5	57	254
IM6-6-1/2-R		6	1/2"	1-1/2"	76,2	50,8	50,8	7	10,5	57	355,6
IM6-6-1/2-B		6	1/2"	1-1/2"	76,2	50,8	50,8	7	10,5	57	355,6
IM6-8-1/2-R		8	1/2"	1-1/2"	76,2	50,8	50,8	7	10,5	57	457,2
IM6-8-1/2-B		8	1/2"	1-1/2"	76,2	50,8	50,8	7	10,5	57	457,2
IM6-10-1/2-R		10	1/2"	1-1/2"	76,2	50,8	50,8	7	10,5	57	558,8
IM6-10-1/2-B		10	1/2"	1-1/2"	76,2	50,8	50,8	7	10,5	57	558,8
IM6-12-1/2-R		12	1/2"	1-1/2"	76,2	50,8	50,8	7	10,5	57	660,4
IM6-12-1/2-B		12	1/2"	1-1/2"	76,2	50,8	50,8	7	10,5	57	660,4

Stainless Steel Manifolds

CONNECTOR FITTINGS AND HOSE



Product Code	Ports	A (BSPP)	A2 (BSPP)	L	L1	L2	B
SSIM4-4-1/2	4	1/2"	1"	240	50	45	40
SSIM4-6-1/2	6	1/2"	1"	340	50	45	40
SSIM4-8-1/2	8	1/2"	1"	440	50	45	40
SSIM4-10-1/2	10	1/2"	1"	540	50	45	40
SSIM4-12-1/2	12	1/2"	1"	640	50	45	40
SSIM5-4-1/2	4	1/2"	1-1/4"	240	50	45	50
SSIM5-6-1/2	6	1/2"	1-1/4"	340	50	45	50
SSIM5-8-1/2	8	1/2"	1-1/4"	440	50	45	50
SSIM5-10-1/2	10	1/2"	1-1/4"	540	50	45	50
SSIM5-12-1/2	12	1/2"	1-1/4"	640	50	45	50



METRIC						
Length	M2	M3	M4	M5	M6	M8
5		UCAP3M05	UCAP4M05			
6		UCAP3M06	UCAP4M06	UCAP5M06		
8		UCAP3M08	UCAP4M08	UCAP5M08	UCAP6M08	
10		UCAP3M10	UCAP4M10	UCAP5M10	UCAP6M10	UCAP8M10
12	UCAP2M12	UCAP3M12	UCAP4M12	UCAP5M12	UCAP6M12	UCAP8M12
16		UCAP3M16	UCAP4M16	UCAP5M16	UCAP6M16	UCAP8M16
20		UCAP3M20	UCAP4M20	UCAP5M20	UCAP6M20	UCAP8M20
25		UCAP3M25	UCAP4M25	UCAP5M25	UCAP6M25	UCAP8M25
30		UCAP3M30	UCAP4M30	UCAP5M30	UCAP6M30	UCAP8M30
35		UCAP3M35	UCAP4M35	UCAP5M35	UCAP6M35	UCAP8M35
40			UCAP4M40	UCAP5M40	UCAP6M40	UCAP8M40
45			UCAP4M45	UCAP5M45	UCAP6M45	UCAP8M45
50			UCAP4M50	UCAP5M50	UCAP6M50	UCAP8M50
55				UCAP5M55	UCAP6M55	UCAP8M55
60				UCAP5M60	UCAP6M60	UCAP8M60
65				UCAP5M65	UCAP6M65	UCAP8M65
70				UCAP5M70	UCAP6M70	UCAP8M70
75					UCAP6M75	UCAP8M75
80				UCAP5M80	UCAP6M80	UCAP8M80
85						
90				UCAP5M90	UCAP6M90	UCAP8M90
95						
100					UCAP6M100	UCAP8M100
110					UCAP6M110	UCAP8M110
120					UCAP6M120	UCAP8M120
130						UCAP8M130
140					UCAP6M140	UCAP8M140
150						UCAP8M150
160						UCAP8M160
180						UCAP8M180
200						

More sizes available next page.

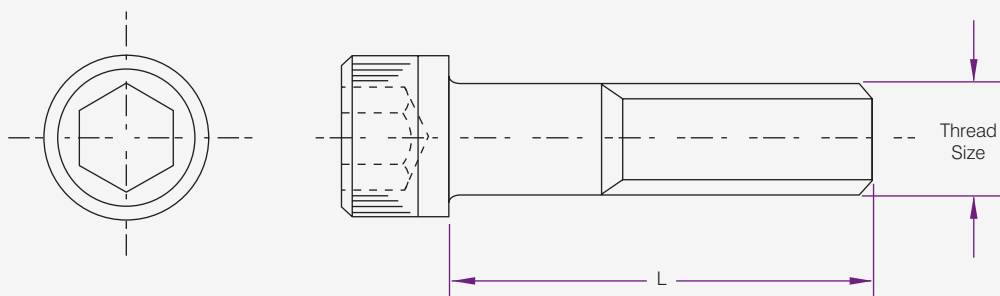


METRIC					
Length	M10	M12	M14	M16	M18
10	UCAP10M10				
12	UCAP10M12	UCAP12M12			
16	UCAP10M16	UCAP12M16			
20	UCAP10M20	UCAP12M20			
25	UCAP10M25	UCAP12M25	UCAP14M25	UCAP16M25	
30	UCAP10M30	UCAP12M30	UCAP14M30	UCAP16M30	
35	UCAP10M35	UCAP12M35	UCAP14M35	UCAP16M35	
40	UCAP10M40	UCAP12M40	UCAP14M40	UCAP16M40	
45	UCAP10M45	UCAP12M45	UCAP14M45	UCAP16M45	
50	UCAP10M50	UCAP12M50	UCAP14M50	UCAP16M50	UCAP18M50
55	UCAP10M55	UCAP12M55	UCAP14M55	UCAP16M55	
60	UCAP10M60	UCAP12M60	UCAP14M60	UCAP16M60	
65	UCAP10M65	UCAP12M65	UCAP14M65	UCAP16M65	
70	UCAP10M70	UCAP12M70	UCAP14M70	UCAP16M70	
75	UCAP10M75	UCAP12M75	UCAP14M75	UCAP16M75	
80	UCAP10M80	UCAP12M80	UCAP14M80	UCAP16M80	
90	UCAP10M90	UCAP12M90	UCAP14M90	UCAP16M90	
100	UCAP10M100	UCAP12M100	UCAP14M100	UCAP16M100	
110	UCAP10M110	UCAP12M110	UCAP14M110	UCAP16M110	
120	UCAP10M120	UCAP12M120	UCAP14M120	UCAP16M120	
130	UCAP10M130	UCAP12M130	UCAP14M130	UCAP16M130	
140	UCAP10M140	UCAP12M140	UCAP14M140	UCAP16M140	
150	UCAP10M150	UCAP12M150	UCAP14M150	UCAP16M150	
160	UCAP10M160	UCAP12M160	UCAP14M160	UCAP16M160	
170	UCAP10M170	UCAP12M170	UCAP14M170	UCAP16M170	
180	UCAP10M180	UCAP12M180	UCAP14M180	UCAP16M180	
190	UCAP10M190	UCAP12M190	UCAP14M190	UCAP16M190	
200	UCAP10M200	UCAP12M200	UCAP14M200	UCAP16M200	
220		UCAP12M220	UCAP14M220	UCAP16M220	
230		UCAP12M230	UCAP14M230		
240		UCAP12M240		UCAP16M240	
250		UCAP12M250	UCAP14M250	UCAP16M250	
260				UCAP16M260	
280					
300			UCAP14M300	UCAP16M300	
320			UCAP14M320		
340			UCAP14M340		

More sizes available next page.



METRIC						
Length	M20	M22	M24	M27	M30	M36
12						
16						
20						
25						
30	UCAP20M30					
35	UCAP20M35					
40	UCAP20M40		UCAP24M40			
45	UCAP20M45		UCAP24M45			
50	UCAP20M50		UCAP24M50			
55	UCAP20M55		UCAP24M55			
60	UCAP20M60		UCAP24M60			
65	UCAP20M65		UCAP24M65			
70	UCAP20M70		UCAP24M70			
75	UCAP20M75		UCAP24M75			
80	UCAP20M80		UCAP24M80	UCAP27M80	UCAP30M80	UCAP36M80
90	UCAP20M90		UCAP24M90	UCAP27M90	UCAP30M90	UCAP36M90
100	UCAP20M100		UCAP24M100	UCAP27M100	UCAP30M100	UCAP36M100
110	UCAP20M110	UCAP22M110	UCAP24M110	UCAP27M110	UCAP30M110	UCAP36M110
120	UCAP20M120		UCAP24M120	UCAP27M120	UCAP30M120	UCAP36M120
130	UCAP20M130	UCAP22M130	UCAP24M130		UCAP30M130	UCAP36M130
140	UCAP20M140		UCAP24M140	UCAP27M140	UCAP30M140	UCAP36M140
150	UCAP20M150		UCAP24M150	UCAP27M150	UCAP30M150	UCAP36M150
160	UCAP20M160		UCAP24M160		UCAP30M160	
170						
180	UCAP20M180		UCAP24M180	UCAP27M180	UCAP30M180	UCAP36M180
190						
200	UCAP20M200		UCAP24M200	UCAP27M200	UCAP30M200	UCAP36M200
220	UCAP20M220		UCAP24M220		UCAP30M220	
230						
240	UCAP20M240		UCAP24M240		UCAP30M240	UCAP36M240
250						
260	UCAP20M260		UCAP24M260		UCAP30M260	UCAP36M260
280	UCAP20M280		UCAP24M280		UCAP30M280	UCAP36M280
300	UCAP20M300		UCAP24M300		UCAP30M300	UCAP36M300
320			UCAP24M320		UCAP30M320	
340			UCAP24M340		UCAP30M340	
360					UCAP30M360	

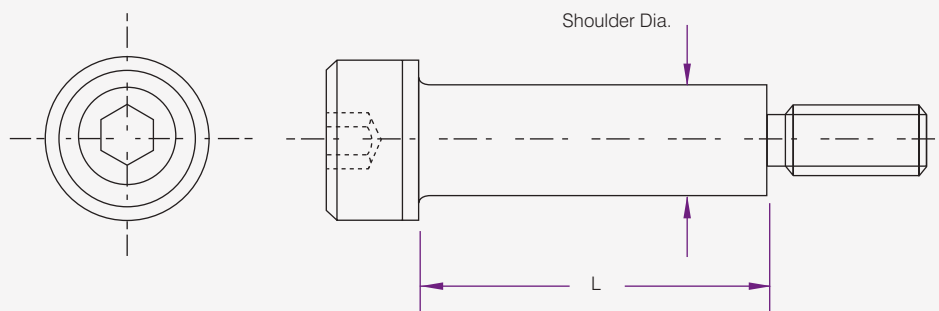


IMPERIAL					
Length	1/8	3/16	1/4	5/16	3/8
1/4		UCAP31614	UCAP1414		
3/8	UCAP1838	UCAP31638	UCAP1438	UCAP51638	
1/2	UCAP1812	UCAP31612	UCAP1412	UCAP51612	UCAP3812
5/8		UCAP31658	UCAP1458	UCAP51658	UCAP3858
3/4	UCAP1834	UCAP31634	UCAP1434	UCAP51634	UCAP3834
7/8			UCAP1478	UCAP51678	
1	UCAP181	UCAP3161	UCAP141	UCAP5161	UCAP381
1 1/4		UCAP316114	UCAP14114	UCAP516114	UCAP38114
1 1/2		UCAP316112	UCAP14112	UCAP516112	UCAP38112
1 3/4		UCAP316134	UCAP14134	UCAP516134	UCAP38134
2		UCAP3162	UCAP142	UCAP5162	UCAP382
2 1/4			UCAP14214	UCAP516214	UCAP38214
2 1/2		UCAP316212	UCAP14212	UCAP516212	UCAP38212
2 3/4			UCAP14234	UCAP516234	UCAP38234
3			UCAP143	UCAP5163	UCAP383
3 1/4			UCAP14314	UCAP516314	UCAP38314
3 1/2			UCAP14312	UCAP516312	UCAP38312
4			UCAP144	UCAP5164	UCAP384
4 1/2				UCAP516412	UCAP38412
5					UCAP385
5 1/2					UCAP38512
6					UCAP386

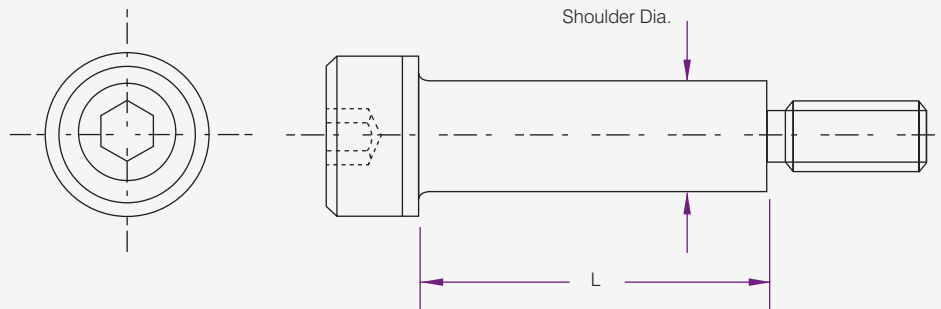
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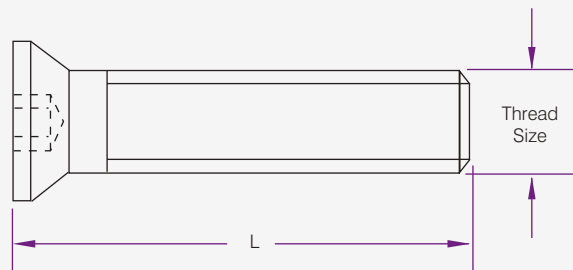
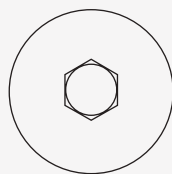
IMPERIAL				
Length	1/2	5/8	3/4	1"
1/2		UCAP5812	UCAP3412	
5/8	UCAP1258			
3/4	UCAP1234			
1	UCAP121	UCAP581		
1 1/4	UCAP12114	UCAP58114	UCAP34114	
1 1/2	UCAP12112	UCAP58112	UCAP34112	UCAP1112
1 3/4	UCAP12134	UCAP58134	UCAP34134	
2	UCAP122	UCAP582	UCAP342	UCAP12
2 1/4	UCAP12214	UCAP58214	UCAP34214	
2 1/2	UCAP12212	UCAP58212	UCAP34212	UCAP1212
2 3/4	UCAP12234			
3	UCAP123	UCAP583	UCAP343	UCAP13
3 1/4	UCAP12314			
3 1/2	UCAP12312	UCAP58312	UCAP34312	UCAP1312
4	UCAP124	UCAP584	UCAP344	UCAP14
4 1/2	UCAP12412	UCAP58412	UCAP34412	
5	UCAP125	UCAP585	UCAP345	UCAP15
5 1/2	UCAP12512	UCAP58512	UCAP34512	
6	UCAP126	UCAP586	UCAP346	UCAP16
6 1/2	UCAP12612	UCAP58612	UCAP34612	
7	UCAP127	UCAP587	UCAP347	UCAP17
8	UCAP128	UCAP588	UCAP348	UCAP18
9			UCAP349	UCAP19



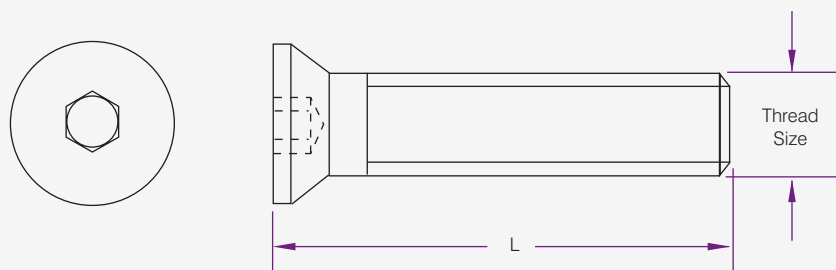
METRIC							
Length	Shoulder Dia (Thread Size)						
	6mm (M5)	8mm (M6)	10mm (M8)	12mm (M10)	16mm (M12)	20mm (M16)	24mm (M20)
10	USS6M10						
12	USS6M12	USS8M12	USS10M12				
16	USS6M16	USS8M16	USS10M16	USS12M16			
20	USS6M20	USS8M20	USS10M20	USS12M20	USS16M20		
25	USS6M25	USS8M25	USS10M25	USS12M25			
30	USS6M30	USS8M30	USS10M30	USS12M30	USS16M30		
35		USS8M35					
40	USS6M40	USS8M40	USS10M40	USS12M40	USS16M40	USS20M40	
50	USS6M50	USS8M50	USS10M50	USS12M50	USS16M50	USS20M50	USS24M50
60	USS6M60	USS8M60	USS10M60	USS12M60	USS16M60	USS20M60	USS24M60
70		USS8M70	USS10M70	USS12M70	USS16M70	USS20M70	USS24M70
80		USS8M80	USS10M80	USS12M80	USS16M80	USS20M80	USS24M80
90				USS12M90	USS16M90	USS20M90	USS24M90
100				USS12M100	USS16M100	USS20M100	USS24M100
120				USS12M120	USS16M120	USS20M120	USS24M120
140				USS12M140			



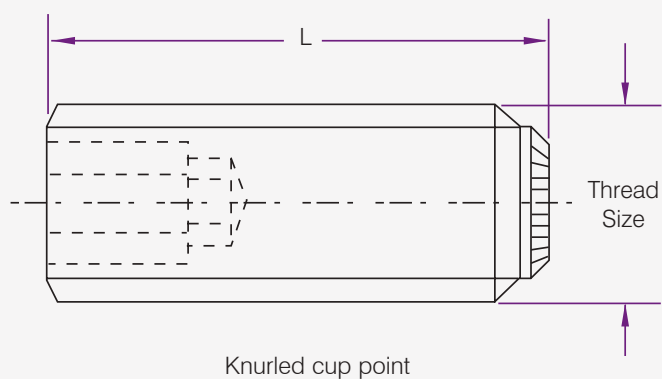
IMPERIAL						
Length	Shoulder Dia (Thread Size)					
	1/4 (3/16)	5/16 (1/4)	3/8 (5/16)	1/2 (3/8)	5/8 (1/2)	3/4 (5/8)
3/8	USS1438	USS51638				
1/2	USS1412	USS51612	USS3812	USS1212		
5/8		USS51658	USS3858	USS1258		
3/4	USS1434	USS51634	USS3834	USS1234		
1	USS141	USS5161	USS381	USS121		
1 1/4	USS14114	USS516114	USS38114	USS12114	USS58114	
1 1/2	USS14112	USS516112	USS38112	USS12112	USS58112	USS34112
1 3/4		USS516134	USS38134	USS12134	USS58134	USS34134
2	USS142	USS5162	USS382	USS122	USS582	USS342
2 1/4		USS516214	USS38214	USS12214	USS58214	USS34214
2 1/2		USS516212	USS38212	USS12212	USS58212	USS34212
2 3/4			USS38234	USS12234	USS58234	USS34234
3			USS383	USS123	USS583	USS343
3 1/4			USS38314	USS12314		
3 1/2			USS38312	USS12312	USS58312	USS34312
4			USS384	USS124	USS584	USS344
4 1/2				USS12412	USS58412	USS34412
4 1/4				USS34414		
5				USS125	USS585	USS345
6						USS346



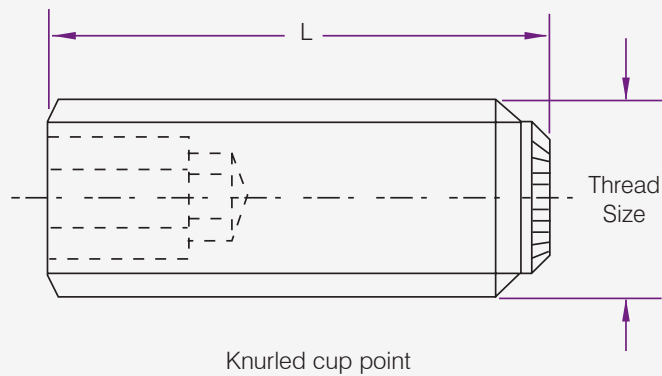
METRIC					
Length	M3	M4	M5	M6	M8
6	UCS3M06				
8	UCS3M08	UCS4M08	UCS5M8		
10	UCS3M10	UCS4M10	UCS5M10	UCS6M10	UCS8M10
12	UCS3M12	UCS4M12	UCS5M12	UCS6M12	UCS8M12
16	UCS3M16	UCS4M16	UCS5M16	UCS6M16	UCS8M16
20	UCS3M20	UCS4M20	UCS5M20	UCS6M20	UCS8M20
25	UCS3M25	UCS4M25	UCS5M25	UCS6M25	UCS8M25
30	UCS3M30	UCS4M30	UCS5M30	UCS6M30	UCS8M30
35		UCS4M35	UCS5M35	UCS6M35	UCS8M35
40		UCS4M40	UCS5M40	UCS6M40	UCS8M40
45			UCS5M45	UCS6M45	UCS8M45
50			UCS5M50	UCS6M50	UCS8M50
55					UCS8M55
60					UCS8M60
70					UCS8M70
Length	M3	M4	M5	M6	M8
10					
12	UCS10M12				
16	UCS10M16	UCS12M16			
20	UCS10M20				
25	UCS10M25	UCS12M25			
30	UCS10M30	UCS12M30	UCS16M30	UCS20M35	
35	UCS10M35	UCS12M35	UCS16M35		
40	UCS10M40	UCS12M40	UCS16M40		
45	UCS10M45	UCS12M45	UCS16M45	UCS20M45	
50	UCS10M50	UCS12M50	UCS16M50		
55	UCS10M55	UCS12M55	UCS16M55	UCS20M55	
60	UCS10M60	UCS12M60	UCS16M60	UCS20M60	UCS24M60
70	UCS10M70	UCS12M70	UCS16M70	UCS20M70	UCS24M70
80	UCS10M80	UCS12M80	UCS16M80	UCS20M80	UCS24M80
90	UCS10M90	UCS12M90	UCS16M90	UCS20M90	UCS24M90
100	UCS10M100	UCS12M100	UCS16M100	UCS20M100	UCS24M100
120			UCS16M120	UCS20M120	UCS24M120
140			UCS16M140	UCS20M140	UCS24M140
160			UCS16M160		



IMPERIAL						
Length	3/16	1/4	5/16	3/8	1/2	5/8
3/8	UCS31638	UCS1438				
1/2	UCS31612	UCS1412	UCS51612	UCS3812		
5/8	UCS31658	UCS1458	UCS51658	UCS3858		
3/4	UCS31634	UCS1434	UCS51634	UCS3834	UCS1234	
1	UCS3161	UCS141	UCS5161	UCS381	UCS121	UCS581
1 1/4	UCS316114	UCS14114	UCS516114	UCS38114	UCS12114	
1 1/2	UCS316112	UCS14112	UCS516112	UCS38112	UCS12112	UCS58112
1 3/4		UCS14134	UCS516134	UCS38134	UCS12134	UCS58134
2		UCS142	UCS5162	UCS382	UCS122	UCS582
2 1/2		UCS14212	UCS516212	UCS38212	UCS12212	UCS58212
3				UCS383	UCS123	UCS583
3 1/2						UCS58312
4						UCS584



METRIC					
Length	M3	M4	M5	M6	M8
3	USET3M03				
4	USET3M04	USET4M4			
5	USET3M05	USET4M5	USET5M5		
6	USET3M06	USET4M6	USET5M6	USET6M6	
8	USET3M08	USET4M8	USET5M8	USET6M8	USET8M8
10	USET3M10	USET4M10	USET5M10	USET6M10	USET8M10
12	USET3M12	USET4M12	USET5M12	USET6M12	USET8M12
16	USET3M16	USET4M16	USET5M16	USET6M16	USET8M16
20		USET4M20	USET5M20	USET6M20	USET8M20
25		USET4M25	USET5M25	USET6M25	USET8M25
30			USET5M30	USET6M30	USET8M30
35				USET6M35	USET8M35
40				USET6M40	USET8M40
45				USET6M45	USET8M45
50				USET6M50	USET8M50
Length	M10	M12	M16	M20	M24
10	USET10M10				
12	USET10M12	USET12M12			
16	USET10M16	USET12M16	USET16M16		
20	USET10M20	USET12M20	USET16M20	USET20M20	
25	USET10M25	USET12M25	USET16M25	USET20M25	USET24M25
30	USET10M30	USET12M30	USET16M30	USET20M30	USET24M30
35	USET10M35	USET12M35	USET16M35	USET20M35	USET24M35
40	USET10M40	USET12M40	USET16M40	USET20M40	USET24M40
45	USET10M45	USET12M45	USET16M45		
50	USET10M50	USET12M50	USET16M50	USET20M50	USET24M50
60		USET12M60	USET16M60	USET20M60	USET24M60



IMPERIAL							
Length	3/16	1/4	5/16	3/8	1/2	5/8	3/4
3/16	USET316316						
1/4	USET31614	USET1414	USET51614				
5/16		USET14516	USET516516	USET38516			
3/8		USET1438	USET51638	USET3838			
1/2	USET31612	USET1412	USET51612	USET3812	USET1212		
5/8			USET51658	USET3858	USET1258	USET5858	
3/4		USET1434		USET3834	USET1234	USET5834	USET3434
7/8					USET1278		
1		USET141	USET5161	USET381	USET121	USET581	USET341
1 1/4					USET12114	USET58114	
1 1/2			USET516112	USET38112	USET12112	USET58112	USET34112
1 3/4						USET58134	
2					USET122	USET582	USET342
2 1/2					USET12212		USET34212



Product Code	Thread Size	Height
UPLUG18	1/8	0.382
UPLUG14	1/4	0.503
UPLUG38	3/8	0.559
UPLUG12	1/2	0.691
UPLUG58	5/8	0.731
UPLUG34	3/4	0.815
UPLUG1	1	0.998



METRIC		
Size	Short Arm	Long Arm
1.5	UMWS015	UMWL015
2	UMWS02	UMWL02
2.5	UMWS025	UMWL025
3	UMWS03	UMWL03
4	UMWS04	UMWL04
5	UMWS05	UMWL05
6	UMWS06	UMWL06
8	UMWS08	UMWL08
10	UMWS10	UMWL10
12	UMWS12	UMWL12
14	UMWS14	UMWL14
17	UMWS17	UMWL17
19	UMWS19	UMWL19



IMPERIAL		
Size	Short Arm	Long Arm
1/16	UWS04	UWL04
5/64	UWS05	UWL05
3/32	UWS06	UWL06
7/64	UWS07	UWL07
1/8	UWS08	UWL08
9/64	UWS09	UWL09
5/32	UWS10	UWL10
3/16	UWS12	UWL12
7/32	UWS14	UWL14
1/4	UWS16	UWL16
5/16	UWS20	UWL20
3/8	UWS24	UWL24
7/16	UWS28	UWL28
1/2	UWS32	UWL32
9/16	UWS36	UWL36
5/8	UWS40	UWL40



Product Code	Description
BONDHUS-HEX-METRIC	Bondhus L - Wrench Sets Metric 9 Pcs Set (Long): 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10mm
BONDHUS-HEX-IMPERIAL	Bondhus L - Wrench Sets Imperial 13 Pcs Set (Long): 0.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8"
BONDHUS-B-END-METRIC	Bondhus Ball End Metric L - Wrench Set 9 Pcs Set: 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10mm
BONDHUS-B-END-IMPERIAL	Bondhus Ball End Imperial L - Wrench Set 13 Pcs Set: 0.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8"
BONDHUS-T-HANDLE-METRIC	Bondhus T Handle Hex Wrench Set 8 Pcs Set with Stand: 2, 2.5, 3, 4, 5, 6, 8, 10mm



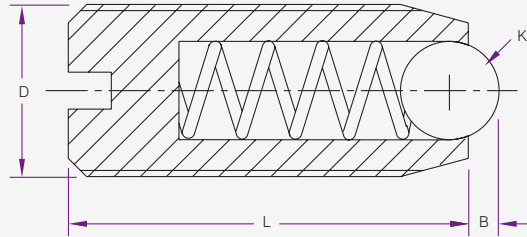
METRIC							
Length	M1.5	M2	M3	M4	M5	M6	M8
5	UD1.5M5						
6	UD1.5M6						
8	UD1.5M8			UD4M8			
10	UD1.5M10		UD3M10	UD4M10			
12	UD1.5M12		UD3M12	UD4M12	UD5M12	UD6M12	
15				UD4M15			
16			UD3M16		UD5M16	UD6M16	UD8M16
18			UD3M18				
20			UD3M20	UD4M20	UD5M20	UD6M20	UD8M20
24		UD2M24	UD3M24	UD4M24	UD5M24		
25			UD3M25	UD4M25	UD5M25	UD6M25	UD8M25
28		UD2M28	UD3M28		UD5M28		
30			UD3M30	UD4M30	UD5M30	UD6M30	UD8M30
32							
35				UD4M35	UD5M35	UD6M35	UD8M35
36				UD4M36	UD5M36		
40				UD4M40	UD5M40	UD6M40	UD8M40
45							
50				UD4M50	UD5M50	UD6M50	UD8M50
55							UD8M55
60						UD6M60	UD8M60
70						UD6M70	UD8M70
Length	M10	M12	M13	M16	M20	M22	
20	UD10M20	UD12M20					
24	UD10M24	UD12M24					
25	UD10M25	UD12M25					
28	UD10M28	UD12M28					
30	UD10M30	UD12M30					
32	UD10M32	UD12M32	UD13M32				
35		UD12M35					
36							
40	UD10M40	UD12M40	UD13M40	UD16M40			
45		UD12M45					
50	UD10M50	UD12M50		UD16M50	UD20M50		
55		UD12M55					
60	UD10M60	UD12M60		UD16M60	UD20M60		
70	UD10M70	UD12M70		UD16M70	UD20M70	UD22M70	
80	UD10M80	UD12M80	UD13M80	UD16M80	UD20M80		
90		UD12M90		UD16M90			
100	UD10M100	UD12M100	UD13M100	UD16M100	UD20M100		
120			UD13M120		UD20M120		



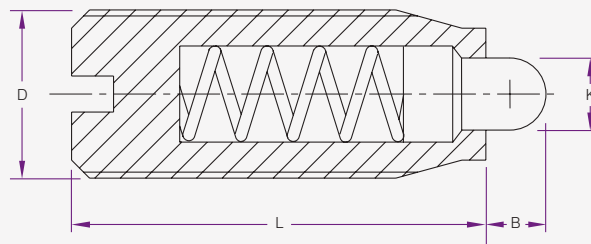
IMPERIAL						
Length	1/8	3/16	1/4	5/16	3/8	1/2
3/8	UD1838					
1/2	UD1812	UD31612	UD1412	UD51612	UD3812	
5/8	UD1858	UD31658				
3/4	UD1834	UD31634	UD1434	UD51634	UD3834	UD1234
1	UD181	UD3161	UD141	UD5161	UD381	UD121
1 1/4	UD18114	UD316114	UD14114	UD516114	UD38114	UD12114
1 1/2	UD18112	UD316112	UD14112	UD516112	UD38112	UD12112
1 3/4	UD18134	UD316134	UD14134	UD516134	UD38134	UD12134
2	UD182	UD3162	UD142	UD5162	UD382	UD122
2 1/4			UD14214	UD516214	UD38214	UD12214
2 1/2			UD14212	UD516212	UD38212	
3				UD5163	UD383	UD123
3 1/2						UD12312
4						UD124



METRIC							
Length	M6	M8	M10	M12	M13	M16	M20
20	UDT6M20	UDT8M20					
24	UDT6M24						
25		UDT8M25	UDT10M25				
28			UDT10M28				
30	UDT6M30	UDT8M30	UDT10M30	UDT12M30			
32			UDT10M32	UDT12M32			
35	UDT6M35	UDT8M35					
36	UDT6M36	UDT8M36	UDT10M36				
40	UDT6M40	UDT8M40	UDT10M40	UDT12M40		UDT16M40	
45				UDT12M45		UDT16M45	
50	UDT6M50	UDT8M50	UDT10M50	UDT12M50	UDT13M50	UDT16M50	UDT20M50
55							
60		UDT8M60	UDT10M60	UDT12M60		UDT16M60	UDT20M60
70			UDT10M70	UDT12M70		UDT16M70	
80			UDT10M80	UDT12M80		UDT16M80	UDT20M80
90						UDT16M90	UDT20M90
100						UDT16M100	UDT20M100
120							UDT20M120



Product Code	D	K	B	L
RAM04	M4	2.5	0.8	9.0
RAM05	M5	3.0	0.9	12
RAM06	M6	3.5	1.0	14
RAM08	M8	5.0	1.5	16
RAM10	M10	6.0	2.0	19
RAM12	M12	8.0	2.5	22
RAM16	M16	10	3.5	24



Product Code	D	K	B	L
RAM04	M4	1.5	1.5	15
RAM05	M5	2.4	2.3	18
RAM06	M6	2.7	2.5	20
RAM08	M8	3.5	3	22
RAM10	M10	4	3	22
RAM12	M12	6	4	28
RAM16	M16	7.5	5	32

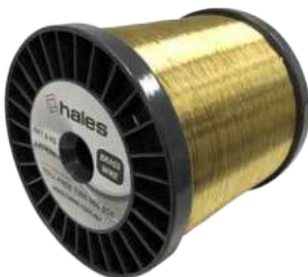


Sumitomo Premium Brass EDM Wire

Produces superior results on virtually any wire EDM machine. Manufactured from high purity brass, Sumitomo SBS EDM Wire offers reliability, high performance and value for money.

Product Code	Size	Type
EDMW20HP3	0.20 x 3Kg	SBS Hard EDM Wire P3 Spool
EDMW20HP5	0.20 x 5Kg	SBS Hard EDM Wire P5 Spool
EDMW25AP3	0.25 x 3Kg	SBS Soft EDM Wire P3 Spool
EDMW25AP5	0.25 x 5Kg	SBS Soft EDM Wire P5 Spool
EDMW25A6DIN160	0.25 x 6Kg	SBS Soft EDM Wire DIN160 Spool
EDMW25A15DIN200	0.25 x 15Kg	SBS Soft EDM Wire DIN200 Spool
EDMW25HP5	0.25 x 5Kg	SBS Hard EDM Wire P5 Spool
EDMW25H6DIN160	0.25 x 6Kg	SBS Hard EDM Wire DIN160 Spool
EDMW25HP10	0.25 x 10Kg	SBS Hard EDM Wire P10 Spool
EDMW25HP20	0.25 x 20Kg	SBS Hard EDM Wire P20 Spool

Specification	Hard	Soft
Composition (%) Cu/Zn	65/35	65/35
Tensile Strength (N/mm ²)	930 - 1080	440 - 585
Diameter Tolerance	±0.001	±0.001



Standard Brass EDM Wire

Hales Standard Brass EDM wire offers a low cost alternative. Suitable for all types of EDM machines and recommended for standard applications requiring good accuracy and surface finish.

Product Code	Size	Type
HW20X5HW	0.20 x 5Kg	Hard EDM Wire P5 Spool
HW25X5HW	0.25 x 5Kg	Hard EDM Wire P5 Spool
HW25X6HWP5	0.25 x 6Kg	Hard EDM Wire P5 Spool
HW25XDIN160H-8KG	0.25 x 8Kg	Hard EDM Wire DIN160 Spool
HW25X10HW	0.25 x 10Kg	Hard EDM Wire P10 Spool

Specification	Hard
Composition (%) Cu/Zn	63/37
Tensile Strength (N/mm ²)	900
Diameter Tolerance	0/-0.002

60/40 Brass EDM Wire

Designed with greater stiffness making it ideal for all automatic wire threading applications. 60/40 Brass EDM Wire has similar chemical composition and characteristics as other high performance Japanese EDM Wires

Product Code	Size	Type
HW25X5H60/40	0.25 x 5Kg	Hard EDM Wire P5 Spool
HW25X6H60/40P5	0.25 x 6Kg	Hard EDM Wire P5 Spool
HW25XDIN160H6040-8KG	0.25 x 8Kg	Hard EDM Wire DIN160 Spool

Specification	Hard
Composition (%) Cu/Zn	60/40
Tensile Strength (N/mm ²)	900
Diameter Tolerance	0/-0.002



SPEEDCUT GAMMA EDM Wire

SpeedCut Gamma EDM Wire (Zinc Coating)

SpeedCut Gamma is a new generation zinc coated EDM Wire that delivers high surface quality and increased speed up to 30% faster than regular brass wire.

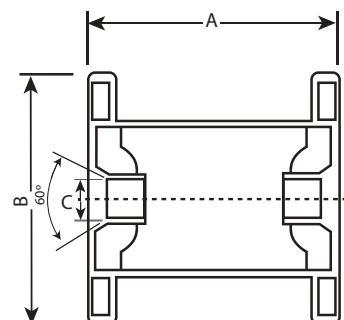
Product Code	Size	Type
SPEEDCUTGAMMA.25-5KG	0.25 x 5Kg	Speedcut Gamma Wire P5 Spool
SPEEDCUTGAMMA.25-6KGP5	0.25 x 6Kg	Speedcut Gamma Wire P5 Spool
SPEEDCUTGAM.25160DIN-8KG	0.25 x 8Kg	Speedcut Gamma Wire DIN160 Spool
SPEEDCUTGAMMA.25-10KG	0.25 x 10Kg	Speedcut Gamma Wire P10 Spool
SPEEDCUTGAMMA.25-16KG	0.25 x 16Kg	Speedcut Gamma Wire DIN200 Spool
SPEEDCUTGAMMA.30-10KG	0.30 x 10Kg	Speedcut Gamma Wire P10 Spool

Specification	Hard
Composition (%) Cu/Zn	63/37
Tensile Strength (N/mm ²)	900
Diameter Tolerance	0/-0.002



Spool Specifications

Spool	A	B	C
DIN 125	125	125	16
DIN 160	160	160	22
DIN 200	200	200	22
P3	110	130	20
P5	115	160	20
P10	133	200	25
P15	140	250	35
P20	140	250	35





Machine Type Suited: Agie, Charmille, Japax, Sodick

Product Code	Size	Type
FILW-01	150 X 32 X 355	EDM Water Filter



Machine Type Suited: Agie, Charmille, Japax

Product Code	Size	Type
FILW-14P	150 X 31 X 375	EDM Water Filter



Machine Type Suited: Brother, Mitsubishi

Product Code	Size	Type
FILW-20M	300 X 29 X 500	EDM Water Filter



Machine Type Suited: Makino

Product Code	Size	Type
FILW-20N-05M	300 X 29 X 500	EDM Water Filter 5 micron
FILW-20N-10M	300 X 29 X 500	EDM Water Filter 10 micron



Machine Type Suited: Japax, Makino, Sodick

Product Code	Size	Type
FILW-23	260 X 46 X 280	EDM Water Filter



Machine Type Suited: Fanuc, Sodick

Product Code	Size	Type
FILW-35CN	340 X 300	Central Nipple EDM Water Filter
FILW-35N	340 X 300	Nipple EDM Water Filter



Machine Type Suited: Fanuc, Sodick

Product Code	Size	Type
FILW-35HP	340 X 46 X 300	EDM Water Filter



Machine Type Suited: Sodick

Product Code	Size	Type
FILW-40N	340 X 450	Central Nipple EDM Water Filter



Machine Type Suited: Sodick

Product Code	Size	Type
FILW-40SE	340 X 46 X 450	EDM Water Filter



EDM Wear Parts available.



Hales Resin is of high quality, specially formulated for the deionisation of water in wire EDM machines. This virgin resin offers many additional hours of service life over ordinary products

Product Code	Size	Type
RESIN-25LT BAG	25L BAG	EDION Long Life Resin
RESIN-25LT BOX	25Lt BOX (5X5L BAG)	EDION Long Life Resin



Hales EDM rust inhibitor reduces rust on workpieces and machines. This solution is environmentally safe, does not affect deionisation or filtration processes and will not cause valves to stick.

Water concentrate: 1:200 (1/2%)

Product Code	Size	Type
FIL-HRI	5L Pail	Novotec Rust Inhibitor



Hales B2000 - EDM Wire Machine Cleaner

- Removes rust, sludge and carbon immediately / that occurred on the guides, control box and work tank of wire cut machines.
- Removes rust and carbon on the work pieces
- Excellent on copper, stainless steel and aluminium
- Does not damage the shine of metallic surfaces and prevents yellowish discolouration
- Cleaning effect lasts for 1 - 2 months
- Possible to dilute and use.

Product Code	Size	Type
FIL-EDMCLEAN 5LT	5Lt	EDM Cleaner



Hales EDM5 Fluid is a high quality solution with all the benefits that make it a superior product

- High flash point and fire point that increase operator safety.
- Superior thermal stability, ensures low evaporation, long filter and fluid life, leading to reduced costs.
- Excellent filterability, allows rapid flushing of erosion debris, which, combined with low viscosity, enables high erosion rates with excellent surface finish.
- Crystal clear and low odour

Product Code	Description	Pack Description
HALES EDM5-20	EDM5 Fluid	20L Pail
HALES EDM5-205	EDM5 Fluid	205L Drum

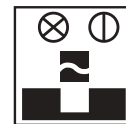
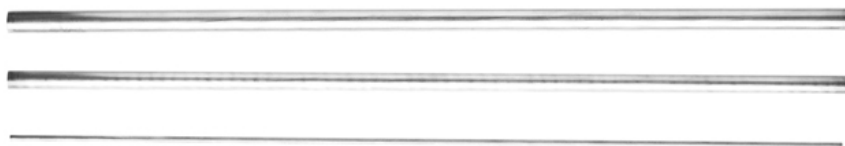
EDM Oil Filters

EDM SUPPLIES

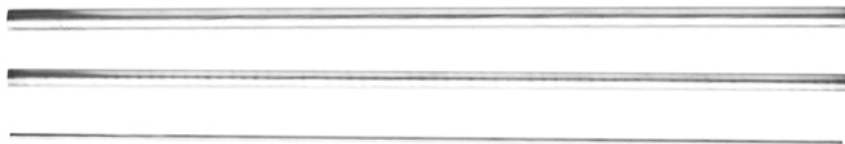


Hales stock a large range of high quality, long life and cost effective EDM filters for EDM wire cut and sinking machines.

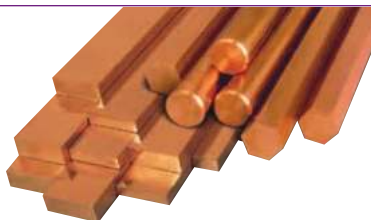
Product Code	Description	Size	Machine Type
FILE-09	EDM Oil Filter	260 X 46 X 280	Makino
FILE-12	EDM Oil Filter	150 X 72 X 450	Japax, Makino, Sodick
FILE-18	EDM Oil Filter	150 X 34 X 345	Hitachi, Mitsubishi
FILE-28	EDM Oil Filter	150 X 32 X 365	Agie, Chmer, Creator, Herless



Product Code	Size Description	Channel Type
TCTC075	0.75mm Coreless Copper Tube	2 Channel
TCTC1	1mm Coreless Copper Tube	3 Channel
TCTC125	1.25mm Coreless Copper Tube	3 Channel
TCTC15	1.5mm Coreless Copper Tube	3 Channel
TCTC175	1.75mm Coreless Copper Tube	3 Channel
TCTC2	2mm Coreless Copper Tube	3 Channel
TCTC25	2.5mm Coreless Copper Tube	3 Channel
TCTC3	3mm Coreless Copper Tube	3 Channel
TCTC35	3.5mm Coreless Copper Tube	3 Channel
TCTC4	4mm Coreless Copper Tube	3 Channel
TCTC45	4.5mm Coreless Copper Tube	3 Channel
TCTC5	5mm Coreless Copper Tube	3 Channel
TCTC6	6mm Coreless Copper Tube	3 Channel
TCTC8	8mm Coreless Copper Tube	3 Channel



Product Code	Size Description	Type
TCTM075	0.75mm Copper Tube	1 Hole
TCTM1	1mm Copper Tube	1 Hole
TCTM125	1.25mm Copper Tube	1 Hole
TCTM15	1.5mm Copper Tube	1 Hole
TCTM175	1.75mm Copper Tube	1 Hole
TCTM2	2mm Copper Tube	1 Hole
TCTM25	2.5mm Copper Tube	1 Hole
TCTM3	3mm Copper Tube	1 Hole
TCTM35	3.5mm Copper Tube	1 Hole
TCTM4	4mm Copper Tube	1 Hole
TCTM45	4.5mm Copper Tube	1 Hole
TCTM5	5mm Copper Tube	1 Hole
TCTM6	6mm Copper Tube	1 Hole
TCTM8	8mm Copper Tube	1 Hole



The addition of tellurium to copper results in

- Short clean chips
- Allows cutting speeds to increase by more than five times used with pure copper
- Excellent surface finish
- Less wear increasing tool life

Tellurium Copper comes in square, round and rectangular profiles

Product Code	Size Description	Type
TC11	1 X 1 Tellurium Copper	Square
TC22	2 X 2 Tellurium Copper	Square
TC212212	2 1/2 X 2 1/2 Tellurium Copper	Square
TC234234	2 3/4 X 2 3/4 Tellurium Copper	Square
TC44	4 Tellurium Copper	Square

Product Code	Size Description	Type
TC14R	1/4" Tellurium Copper	Round
TC38R	3/8" Tellurium Copper	Round
TC12R	1/2" Tellurium Copper	Round
TC58R	5/8" Tellurium Copper	Round
TC34R	3/4" Tellurium Copper	Round
TC1R	1" Tellurium Copper	Round
TC114R	1 1/4" Tellurium Copper	Round
TC112R	1 1/2" Tellurium Copper	Round
TC134R	1 3/4" Tellurium Copper	Round
TC2R	2" Tellurium Copper	Round
TC212R	2 1/2" Tellurium Copper	Round
TC3R	3" Tellurium Copper	Round
TC4R	4" Tellurium Copper	Round
TC6R	6" Tellurium Copper	Round

Product Code	Size Description	Type
TC3164	3/16 X 4 Tellurium Copper	Rectangular
TC143	1/4 X 3 Tellurium Copper	Rectangular
TC146	1/4 X 6 Tellurium Copper	Rectangular
TC121	1/2 X 1 Tellurium Copper	Rectangular
TC122	1/2 X 2 Tellurium Copper	Rectangular
TC123	1/2 X 3 Tellurium Copper	Rectangular
TC124	1/2 X 4 Tellurium Copper	Rectangular
TC126	1/2 X 6 Tellurium Copper	Rectangular
TC342	3/4 X 2 Tellurium Copper	Rectangular
TC343	3/4 X 3 Tellurium Copper	Rectangular
TC344	3/4 X 4 Tellurium Copper	Rectangular
TC12	1 X 2 Tellurium Copper	Rectangular
TC13	1 X 3 Tellurium Copper	Rectangular
TC16	1 X 6 Tellurium Copper	Rectangular
TC1344	1 3/4 X 4 Tellurium Copper	Rectangular
TC1346	1 3/4 X 6 Tellurium Copper	Rectangular
TC2614	2 X 6 1/4 Tellurium Copper	Rectangular
TC2124	2 1/2 X 4 Tellurium Copper	Rectangular



Main characteristics and properties of the materials :

- High as quenched hardness
- Low dimensional movement or distortion after hardening
- Hardens from a relatively low hardening temperature
- Good machinability

Typical Applications:

- Blanking Dies
- Gauges
- Form Tools
- Taps
- Punches
- Dies
- Gauge Blocks
- Jigs & Fixtures

The nominal chemical composition is as follows:

- Carbon 0.95%
- Manganese 1.2%
- Chromium 0.50%
- Tungsten 0.50%
- Silicon 0.25%
- Vanadium 0.20%
- S & P up to 0.035% maximum

01 is a medium alloyed oil hardening steel with excellent cutting force and toughness, the excellent dimensional stability reduces distortion and the possibility of cracking during heat treatment.

Supplied in the annealed condition, the precision tolerances minimise additional costly tool room machining.

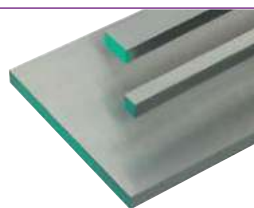
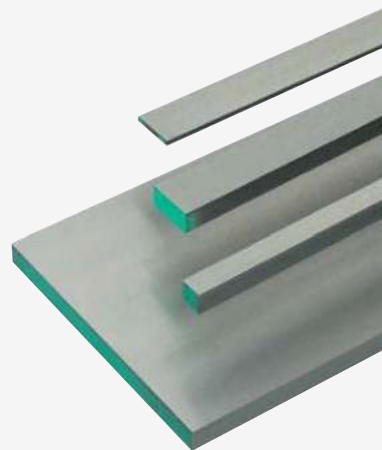
Ground Flat Stock provides toolmakers with a decarburisation free surface, plus

high wear resistance after heat treatment, making it ideal for a multitude of uses and applications: dies, press tools, punches, gauges, cams, jigs, machining knives and marking devices.

Hardness as supplied: 229 Brinall max Tensile Strength: 45 Tons / sq. in.

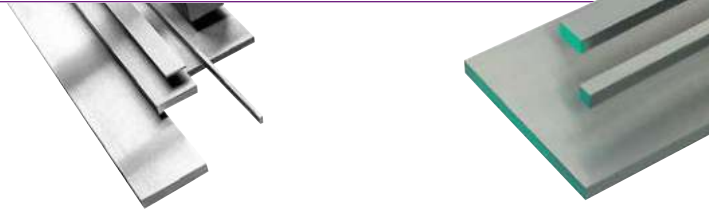
Tolerances: Thickness -0/+0.05, Width -0/+0.2

Hales stock a comprehensive range of metric Ground Flat Stock in 500mm lengths. 1 metre lengths also available.



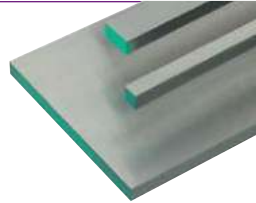
Part Number	Description
GM01010	1 X 10 X 500 Gauge Plate
GM01010M	1 X 10 X 1000 Gauge Plate
GM01015	1 X 15 x 500 Gauge Plate
GM01020	1 X 20 X 500 Gauge Plate
GM01020M	1 X 20 X 1000 Gauge Plate
GM01025	1 X 25 X 500 Gauge Plate
GM01030	1 X 30 X 500 Gauge Plate
GM01030M	1 X 30 X 1000 Gauge Plate
GM01040	1 X 40 X 500 Gauge Plate
GM01040M	1 X 40 X 1000 Gauge Plate
GM01050	1 X 50 X 500 Gauge Plate
GM01050M	1 X 50 X 1000 Gauge Plate

Part Number	Description
GM01060	1 X 60 X 500 Gauge Plate
GM01060M	1 X 60 X 1000 Gauge Plate
GM01075	1 X 75 X 500 Gauge Plate
GM01075M	1 X 75 X 1000 Gauge Plate
GM01080	1 X 80 X 500 Gauge Plate
GM01100	1 X 100 X 500 Gauge Plate
GM01100M	1 X 100 X 1000 Gauge Plate
GM01125	1 X 125 X 500 Gauge Plate
GM01125M	1 X 125 X 1000 Gauge Plate
GM01150	1 X 150 X 500 Gauge Plate
GM01150M	1 X 150 X 1000 Gauge Plate
GM01200	1 X 200 X 500 Gauge Plate



Part Number	Description
GM01250	1 X 250 X 500 Gauge Plate
GM01300	1 X 300 X 500 Gauge Plate
GM015010	1.5 X 10 X 500 Gauge Plate
GM015015	1.5 X 15 X 500 Gauge Plate
GM015015M	1.5 X 15 X 1000 Gauge Plate
GM015020	1.5 X 20 X 500 Gauge Plate
GM015025	1.5 X 25 X 500 Gauge Plate
GM015025M	1.5 X 25 X 1000 Gauge Plate
GM015030	1.5 X 30 X 500 Gauge Plate
GM015030M	1.5 X 30 X 1000 Gauge Plate
GM015040	1.5 X 40 X 500 Gauge Plate
GM015050	1.5 X 50 X 500 Gauge Plate
GM015050M	1.5 X 50 X 1000 Gauge Plate
GM015060	1.5 X 60 X 500 Gauge Plate
GM015060M	1.5 X 60 X 1000 Gauge Plate
GM015075	1.5 X 75 X 500 Gauge Plate
GM015075M	1.5 X 75 X 1000 Gauge Plate
GM015080	1.5 X 80 X 500 Gauge Plate
GM015080M	1.5 X 80 X 1000 Gauge Plate
GM015100	1.5 X 100 X 500 Gauge Plate
GM015100M	1.5 X 100 X 1000 Gauge Plate
GM015125	1.5 X 125 X 500 Gauge Plate
GM015125M	1.5 X 125 X 1000 Gauge Plate
GM015150	1.5 X 150 X 500 Gauge Plate
GM015150M	1.5 X 150 X 1000 Gauge Plate
GM015200	1.5 X 200 X 500 Gauge Plate
GM015200M	1.5 X 200 X 1000 Gauge Plate
GM015250	1.5 X 250 X 500 Gauge Plate
GM015300	1.5 X 300 X 500 Gauge Plate
GM02010	2 X 10 X 500 Gauge Plate
GM02010M	2 X 10 X 1000 Gauge Plate
GM02015	2 X 15 X 500 Gauge Plate
GM02015M	2 X 15 X 1000 Gauge Plate
GM02020	2 X 20 X 500 Gauge Plate
GM02020M	2 X 20 X 1000 Gauge Plate
GM02025	2 X 25 X 500 Gauge Plate
GM02025M	2 X 25 X 1000 Gauge Plate
GM02030	2 X 30 X 500 Gauge Plate
GM02030M	2 X 30 X 1000 Gauge Plate
GM02040	2 X 40 X 500 Gauge Plate
GM02040M	2 X 40 X 1000 Gauge Plate
GM02050	2 X 50 X 500 Gauge Plate
GM02050M	2 X 50 X 1000 Gauge Plate
GM02060	2 X 60 X 500 Gauge Plate
GM02060M	2 X 60 X 1000 Gauge Plate
GM02075	2 X 75 X 500 Gauge Plate
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GM02080	2 X 80 X 500 Gauge Plate
GM02080M	2 X 80 X 1000 Gauge Plate

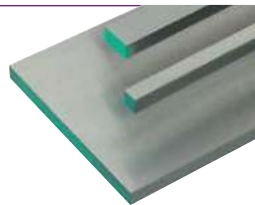
Part Number	Description
GM02100	2 X 100 X 500 Gauge Plate
GM02100M	2 X 100 X 1000 Gauge Plate
GM02125	2 X 125 X 500 Gauge Plate
GM02125M	2 X 125 X 1000 Gauge Plate
GM02150	2 X 150 X 500 Gauge Plate
GM02150M	2 X 150 X 1000 Gauge Plate
GM02200	2 X 200 X 500 Gauge Plate
GM02200M	2 X 200 X 1000 Gauge Plate
GM02250	2 X 250 X 500 Gauge Plate
GM02250M	2 X 250 X 1000 Gauge Plate
GM02300	2 X 300 X 500 Gauge Plate
GM02300M	2 X 300 X 1000 Gauge Plate
GM0300	3mm sq X 500 Gauge Plate
GM03010	3 X 10 X 500 Gauge Plate
GM03010M	3 X 10 X 1000 Gauge Plate
GM03012	3 X 12 X 500 Gauge Plate
GM03012M	3 X 12 X 1000 Gauge Plate
GM03015	3 X 15 X 500 Gauge Plate
GM03015M	3 X 15 X 1000 Gauge Plate
GM03020	3 X 20 X 500 Gauge Plate
GM03020M	3 X 20 X 1000 Gauge Plate
GM03025	3 X 25 X 500 Gauge Plate
GM03025M	3 X 25 X 1000 Gauge Plate
GM03030	3 X 30 X 500 Gauge Plate
GM03030M	3 X 30 X 1000 Gauge Plate
GM03040	3 X 40 X 500 Gauge Plate
GM03040M	3 X 40 X 1000 Gauge Plate
GM03050	3 X 50 X 500 Gauge Plate
GM03050M	3 X 50 X 1000 Gauge Plate
GM03060	3 X 60 X 500 Gauge Plate
GM03060M	3 X 60 X 1000 Gauge Plate
GM03070	3 X 70 X 500 Gauge Plate
GM03075	3 X 75 X 500 Gauge Plate
GM03075M	3 X 75 X 1000 Gauge Plate
GM03080M	3 X 80 X 1000 Gauge Plate
GM03100	3 X 100 X 500 Gauge Plate
GM03100M	3 X 100 X 1000 Gauge Plate
GM03125	3 X 125 X 500 Gauge Plate
GM03125M	3 X 125 X 1000 Gauge Plate
GM03150	3 X 150 X 500 Gauge Plate
GM03150M	3 X 150 X 1000 Gauge Plate
GM03200	3 X 200 X 500 Gauge Plate
GM03200M	3 X 200 X 1000 Gauge Plate
GM03250	3 X 250 X 500 Gauge Plate



Part Number	Description
GM03300	3 X 300 X 500 Gauge Plate
GM03300M	3 X 300 X 1000 Gauge Plate
GM0400	4mmsq X 500 Gauge Plate
GM04010	4 X 10 X 500 Gauge Plate
GM04010M	4 X 10 X 1000 Gauge Plate
GM04015	4 X 15 X 500 Gauge Plate
GM04015M	4 X 15 X 1000 Gauge Plate
GM04020	4 X 20 X 500 Gauge Plate
GM04020M	4 X 20 X 1000 Gauge Plate
GM04025	4 X 25 X 500 Gauge Plate
GM04025M	4 X 25 X 1000 Gauge Plate
GM04030	4 X 30 X 500 Gauge Plate
GM04030M	4 X 30 X 1000 Gauge Plate
GM04040	4 X 40 X 500 Gauge Plate
GM04040M	4 X 40 X 1000 Gauge Plate
GM04050	4 X 50 X 500 Gauge Plate
GM04050M	4 X 50 X 1000 Gauge Plate
GM04060	4 X 60 X 500 Gauge Plate
GM04060M	4 X 60 X 1000 Gauge Plate
GM04075	4 X 75 X 500 Gauge Plate
GM04075M	4 X 75 X 1000 Gauge Plate
GM04080	4 X 80 X 500 Gauge Plate
GM04100	4 X 100 X 500 Gauge Plate
GM04100M	4 X 100 X 1000 Gauge Plate
GM04125	4 X 125 X 500 Gauge Plate
GM04125M	4 X 125 X 1000 Gauge Plate
GM04150	4 X 150 X 500 Gauge Plate
GM04150M	4 X 150 X 1000 Gauge Plate
GM04200	4 X 200 X 500 Gauge Plate
GM04200M	4 X 200 X 1000 Gauge Plate
GM04250	4 X 250 X 500 Gauge Plate
GM04250M	4 X 250 X 1000 Gauge Plate
GM04300	4 X 300 X 500 Gauge Plate
GM04300M	4 X 300 X 1000 Gauge Plate
GM0500	5mmsq X 500 Gauge Plate
GM05010	5 X 10 X 500 Gauge Plate
GM05010M	5 X 10 X 1000 Gauge Plate
GM05015	5 X 15 X 500 Gauge Plate
GM05020	5 X 20 X 500 Gauge Plate
GM05020M	5 X 20 X 1000 Gauge Plate
GM05025	5 X 25 X 500 Gauge Plate
GM05025M	5 X 25 X 1000 Gauge Plate
GM05030	5 X 30 X 500 Gauge Plate
GM05030M	5 X 30 X 1000 Gauge Plate
GM05040	5 X 40 X 500 Gauge Plate
GM05040M	5 X 40 X 1000 Gauge Plate
GM05050	5 X 50 X 500 Gauge Plate
GM05050M	5 X 50 X 1000 Gauge Plate
GM05060	5 X 60 X 500 Gauge Plate
GM05060M	5 X 60 X 1000 Gauge Plate
GM05075	5 X 75 X 500 Gauge Plate

Part Number	Description
GM05075M	5 X 75 X 1000 Gauge Plate
GM05080	5 X 80 X 500 Gauge Plate
GM05080M	5 X 80 X 1000 Gauge Plate
GM05100	5 X 100 X 500 Gauge Plate
GM05100M	5 X 100 X 1000 Gauge Plate
GM05125	5 X 125 X 500 Gauge Plate
GM05125M	5 X 125 X 1000 Gauge Plate
GM05150	5 X 150 X 500 Gauge Plate
GM05150M	5 X 150 X 1000 Gauge Plate
GM05200	5 X 200 X 500 Gauge Plate
GM05200M	5 X 200 X 1000 Gauge Plate
GM05250	5 X 250 X 500 Gauge Plate
GM05250M	5 X 250 X 1000 Gauge Plate
GM05300	5 X 300 X 500 Gauge Plate
GM0600	6mm Sq X 500 Gauge Plate
GM06010	6 X 10 X 500 Gauge Plate
GM06010M	6 X 10 X 1000 Gauge Plate
GM06015	6 X 15 X 500 Gauge Plate
GM06015M	6 X 15 X 1000 Gauge Plate
GM06020	6 X 20 X 500 Gauge Plate
GM06020M	6 X 20 X 1000 Gauge Plate
GM06025	6 X 25 X 500 Gauge Plate
GM06025M	6 X 25 X 1000 Gauge Plate
GM06030	6 X 30 X 500 Gauge Plate
GM06030M	6 X 30 X 1000 Gauge Plate
GM06040	6 X 40 X 500 Gauge Plate
GM06040M	6 X 40 X 1000 Gauge Plate
GM06050	6 X 50 X 500 Gauge Plate
GM06050M	6 X 50 X 1000 Gauge Plate
GM06060	6 X 60 X 500 Gauge Plate
GM06060M	6 X 60 X 1000 Gauge Plate
GM06075	6 X 75 X 500 Gauge Plate
GM06075M	6 X 75 X 1000 Gauge Plate
GM06080	6 X 80 X 500 Gauge Plate
GM06080M	6 X 80 X 1000 Gauge Plate
GM06100	6 X 100 X 500 Gauge Plate
GM06100M	6 X 100 X 1000 Gauge Plate
GM06125	6 X 125 X 500 Gauge Plate
GM06125M	6 X 125 X 1000 Gauge Plate
GM06150	6 X 150 X 500 Gauge Plate
GM06150M	6 X 150 X 1000 Gauge Plate
GM06200	6 X 200 X 500 Gauge Plate
GM06200M	6 X 200 X 1000 Gauge Plate

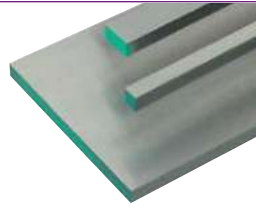
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Part Number	Description
GM06250	6 X 250 X 500 Gauge Plate
GM06300	6 X 300 X 500 Gauge Plate
GM0800	8mmsq X 500 Gauge Plate
GM08010	8 X 10 X 500 Gauge Plate
GM08010M	8 X 10 X 1000 Gauge Plate
GM08015	8 X 15 X 500 Gauge Plate
GM08015M	8 X 15 X 1000 Gauge Plate
GM08020	8 X 20 X 500 Gauge Plate
GM08020M	8 X 20 X 1000 Gauge Plate
GM08025	8 X 25 X 500 Gauge Plate
GM08025M	8 X 25 X 1000 Gauge Plate
GM08030	8 X 30 X 500 Gauge Plate
GM08030M	8 X 30 X 1000 Gauge Plate
GM08040	8 X 40 X 500 Gauge Plate
GM08040M	8 X 40 X 1000 Gauge Plate
GM08050	8 X 50 X 500 Gauge Plate
GM08050M	8 X 50 X 1000 Gauge Plate
GM08060	8 X 60 X 500 Gauge Plate
GM08060M	8 X 60 X 1000 Gauge Plate
GM08075	8 X 75 X 500 Gauge Plate
GM08075M	8 X 75 X 1000 Gauge Plate
GM08080	8 X 80 X 500 Gauge Plate
GM08080M	8 X 80 X 1000 Gauge Plate
GM08100	8 X 100 X 500 Gauge Plate
GM08100M	8 X 100 X 1000 Gauge Plate
GM08125	8 X 125 X 500 Gauge Plate
GM08125M	8 X 125 X 1000 Gauge Plate
GM08150	8 X 150 X 500 Gauge Plate
GM08150M	8 X 150 X 1000 Gauge Plate
GM08200	8 X 200 X 500 Gauge Plate
GM08200M	8 X 200 X 1000 Gauge Plate
GM08250	8 X 250 X 500 Gauge Plate
GM08250M	8 X 250 X 1000 Gauge Plate
GM08300	8 X 300 X 500 Gauge Plate
GM1000	10mmsq X 500 Gauge Plate
GM10015	10 X 15 X 500 Gauge Plate
GM10015M	10 X 15 X 1000 Gauge Plate
GM10020	10 X 20 X 500 Gauge Plate
GM10020M	10 X 20 X 1000 Gauge Plate
GM10025	10 X 25 X 500 Gauge Plate
GM10025M	10 X 25 X 1000 Gauge Plate
GM10030	10 X 30 X 500 Gauge Plate
GM10030M	10 X 30 X 1000 Gauge Plate
GM10040	10 X 40 X 500 Gauge Plate
GM10040M	10 X 40 X 1000 Gauge Plate
GM10050	10 X 50 X 500 Gauge Plate
GM10050M	10 X 50 X 1000 Gauge Plate
GM10060	10 X 60 X 500 Gauge Plate
GM10060M	10 X 60 X 1000 Gauge Plate

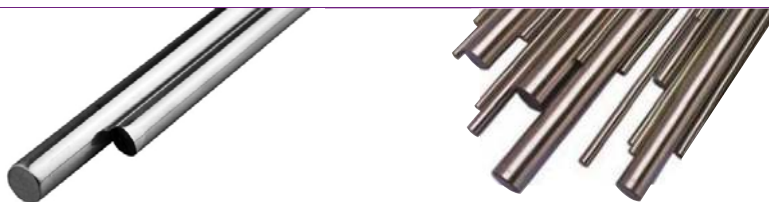
Part Number	Description
GM10075	10 X 75 X 500 Gauge Plate
GM10075M	10 X 75 X 1000 Gauge Plate
GM10100	10 X 100 X 500 Gauge Plate
GM10100M	10 X 100 X 1000 Gauge Plate
GM10125	10 X 125 X 500 Gauge Plate
GM10125M	10 X 125 X 1000 Gauge Plate
GM10150	10 X 150 X 500 Gauge Plate
GM10150M	10 X 150 X 1000 Gauge Plate
GM10200	10 X 200 X 500 Gauge Plate
GM10200M	10 X 200 X 1000 Gauge Plate
GM10250	10 X 250 X 500 Gauge Plate
GM10300	10 X 300 X 500 Gauge Plate
GM1200	12mm Sq X 500 Gauge Plate
GM12015	12 X 15 X 500 Gauge Plate
GM12015M	12 X 15 X 1000 Gauge Plate
GM12020	12 X 20 X 500 Gauge Plate
GM12020M	12 X 20 X 1000 Gauge Plate
GM12025	12 X 25 X 500 Gauge Plate
GM12025M	12 X 25 X 1000 Gauge Plate
GM12030	12 X 30 X 500 Gauge Plate
GM12030M	12 X 30 X 1000 Gauge Plate
GM12040	12 X 40 X 500 Gauge Plate
GM12040M	12 X 40 X 1000 Gauge Plate
GM12050	12 X 50 X 500 Gauge Plate
GM12050M	12 X 50 X 1000 Gauge Plate
GM12060	12 X 60 X 500 Gauge Plate
GM12060M	12 X 60 X 1000 Gauge Plate
GM12075	12 X 75 X 500 Gauge Plate
GM12080	12 X 80 X 500 Gauge Plate
GM12080M	12 X 80 X 1000 Gauge Plate
GM12100	12 X 100 X 500 Gauge Plate
GM12100M	12 X 100 X 1000 Gauge Plate
GM12125	12 X 125 X 500 Gauge Plate
GM12125M	12 X 125 X 1000 Gauge Plate
GM12150	12 X 150 X 500 Gauge Plate
GM12150M	12 X 150 X 1000 Gauge Plate
GM12200	12 X 200 X 500 Gauge Plate
GM12200M	12 X 200 X 1000 Gauge Plate
GM12250	12 X 250 X 500 Gauge Plate

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Part Number	Description
GM12250M	12 X 250 X 1000 Gauge Plate
GM12300	12 X 300 X 500 Gauge Plate
GM1500	15mmsq X 500 Gauge Plate
GM15020	15 X 20 X 500 Gauge Plate
GM15020M	15 X 20 X 1000 Gauge Plate
GM15025	15 X 25 X 500 Gauge Plate
GM15030	15 X 30 X 500 Gauge Plate
GM15030M	15 X 30 X 1000 Gauge Plate
GM15040	15 X 40 X 500 Gauge Plate
GM15040M	15 X 40 X 1000 Gauge Plate
GM15050	15 X 50 X 500 Gauge Plate
GM15050M	15 X 50 X 1000 Gauge Plate
GM15060	15 X 60 X 500 Gauge Plate
GM15060M	15 X 60 X 1000 Gauge Plate
GM15075	15 X 75 X 500 Gauge Plate
GM15080	15 X 80 X 500 Gauge Plate
GM15100	15 X 100 X 500 Gauge Plate
GM15100M	15 X 100 X 1000 Gauge Plate
GM15125	15 X 125 X 500 Gauge Plate
GM15150	15 X 150 X 500 Gauge Plate
GM15150M	15 X 150 X 1000 Gauge Plate
GM15200	15 X 200 X 500 Gauge Plate
GM15250	15 X 250 X 500 Gauge Plate
GM15250M	15 X 250 X 1000 Gauge Plate
GM15300	15 X 300 X 500 Gauge Plate
GM2000	20mm sq X 500 Gauge Plate
GM2000M	20mmsq X 1000 Gauge Plate
GM20025	20 X 25 X 500 Gauge Plate
GM20025M	20 X 25 X 1000 Gauge Plate
GM20030	20 X 30 X 500 Gauge Plate
GM20030M	20 X 30 X 1000 Gauge Plate
GM20040	20 X 40 X 500 Gauge Plate
GM20040M	20 X 40 X 1000 Gauge Plate
GM20050	20 X 50 X 500 Gauge Plate
GM20050M	20 X 50 X 1000 Gauge Plate
GM20060	20 X 60 X 500 Gauge Plate
GM20060M	20 X 60 X 1000 Gauge Plate
GM20075	20 X 75 X 500 Gauge Plate
GM20075M	20 X 75 X 1000 Gauge Plate
GM20080	20 X 80 X 500 Gauge Plate
GM20080M	20 X 80 X 1000 Gauge Plate
GM20100	20 X 100 X 500 Gauge Plate
GM20125	20 X 125 X 500 Gauge Plate
GM20150	20 X 150 X 500 Gauge Plate
GM20200	20 X 200 X 500 Gauge Plate
GM20250	20 X 250 X 500 Gauge Plate

Part Number	Description
GM20250M	20 X 250 X 1000 Gauge Plate
GM20300	20 X 300 X 500 Gauge Plate
GM2500	25mm Sq X 500 Gauge Plate
GM25030	25 X 30 X 500 Gauge Plate
GM25030M	25 X 30 X 1000 Gauge Plate
GM25040	25 X 40 X 500 Gauge Plate
GM25040M	25 X 40 X 1000 Gauge Plate
GM25050	25 X 50 X 500 Gauge Plate
GM25050M	25 X 50 X 1000 Gauge Plate
GM25060	25 X 60 X 500 Gauge Plate
GM25075	25 X 75 X 500 Gauge Plate
GM25075M	25 X 75 X 1000 Gauge Plate
GM25080	25 X 80 X 500 Gauge Plate
GM25080M	25 X 80 X 1000 Gauge Plate
GM25100	25 X 100 X 500 Gauge Plate
GM25100M	25 X 100 X 1000 Gauge Plate
GM25125	25 X 125 X 500 Gauge Plate
GM25125M	25 X 125 X 1000 Gauge Plate
GM25150	25 X 150 X 500 Gauge Plate
GM25200	25 X 200 X 500 Gauge Plate
GM25250	25 X 250 X 500 Gauge Plate
GM25250M	25 X 250 X 1000 Gauge Plate
GM25300	25 X 300 X 500 Gauge Plate
GM25300M	25 X 300 X 1000 Gauge Plate
GM3000	30mmsq X 500 Gauge Plate
GM30040	30 X 40 X 500 Gauge Plate
GM30040M	30 X 40 X 1000 Gauge Plate
GM30050	30 X 50 X 500 Gauge Plate
GM30050M	30 X 50 X 1000 Gauge Plate
GM30060	30 X 60 X 500 Gauge Plate
GM30060M	30 X 60 X 1000 Gauge Plate
GM30075	30 X 75 X 500 Gauge Plate
GM30075M	30 X 75 X 1000 Gauge Plate
GM30080	30 X 80 X 500 Gauge Plate
GM30080M	30 X 80 X 1000 Gauge Plate
GM30100	30 X 100 X 500 Gauge Plate
GM30125	30 X 125 X 500 Gauge Plate
GM30125M	30 X 125 X 1000 Gauge Plate
GM30150	30 X 150 X 500 Gauge Plate
GM30150M	30 X 150 X 1000 Gauge Plate
GM30200	30 X 200 X 500 Gauge Plate
GM30200M	30 X 200 X 1000 Gauge Plate
GM30250	30 X 250 X 500 Gauge Plate
GM30250M	30 X 250 X 1000 Gauge Plate
GM30300	30 X 300 X 500 Gauge Plate
GM30300M	30 X 300 X 1000 Gauge Plate
GM4000	40mmsq X 500 Gauge Plate
GM5000	50mmsq X 500 Gauge Plate



Metric - Round Water Hardening Silver Steel

METRIC	
Product Code	Rod Dia.
SSM02	2mm Dia. Silver Steel Water Hardening
SSM025	2.5mm Dia. Silver Steel Water Hardening
SSM03	3mm Dia. Silver Steel Water Hardening
SSM035	3.5mm Dia. Silver Steel Water Hardening
SSM04	4mm Dia. Silver Steel Water Hardening
SSM045	4.5mm Dia. Silver Steel Water Hardening
SSM05	5mm Dia. Silver Steel Water Hardening
SSM055	5.5mm Dia. Silver Steel Water Hardening
SSM06	6mm Dia. Silver Steel Water Hardening
SSM065	6.5mm Dia. Silver Steel Water Hardening
SSM075	7.5mm Dia. Silver Steel Water Hardening
SSM08	8mm Dia. Silver Steel Water Hardening
SSM09	9mm Dia. Silver Steel Water Hardening
SSM095	9.5mm Dia. Silver Steel Water Hardening
SSM10	10mm Dia. Silver Steel Water Hardening
SSM12	12mm Dia. Silver Steel Water Hardening
SSM125	12.5mm Dia. Silver Steel Water Hardening
SSM13	13mm Dia. Silver Steel Water Hardening
SSM14	14mm Dia. Silver Steel Water Hardening
SSM15	15mm Dia. Silver Steel Water Hardening
SSM16	16mm Dia. Silver Steel Water Hardening
SSM17	17mm Dia. Silver Steel Water Hardening
SSM18	18mm Dia. Silver Steel Water Hardening
SSM19	19mm Dia. Silver Steel Water Hardening
SSM20	20mm Dia. Silver Steel Water Hardening
SSM21	21mm Dia. Silver Steel Water Hardening
SSM22	22mm Dia. Silver Steel Water Hardening
SSM23	23mm Dia. Silver Steel Water Hardening
SSM24	24mm Dia. Silver Steel Water Hardening
SSM25	25mm Dia. Silver Steel Water Hardening
SSM26	26mm Dia. Silver Steel Water Hardening
SSM30	30mm Dia. Silver Steel Water Hardening



Imperial - Round Water Hardening Silver Steel

IMPERIAL	
Product Code	Rod Dia.
SS08	1/8 Dia. Silver Steel Water Hardening
SS12	3/16 Dia. Silver Steel Water Hardening
SS16	1/4 Dia. Silver Steel Water Hardening
SS20	5/16 Dia. Silver Steel Water Hardening
SS24	3/8 Dia. Silver Steel Water Hardening
SS28	7/16 Dia. Silver Steel Water Hardening
SS32	1/2 Dia. Silver Steel Water Hardening
SS40	5/8 Dia. Silver Steel Water Hardening
SS48	3/4 Dia. Silver Steel Water Hardening
SS56	7/8 Dia. Silver Steel Water Hardening
SS64	1" Dia. Silver Steel Water Hardening
SS86	1.1/4" Dia. Silver Steel Water Hardening



Available in 50 cm and 100 cm lengths. Thickness specified before grinding.

Product Code	Description
HSB10010-050	100 x 10 Stock Bar 50 cm
HSB10010-100	100 X 10 Stock Bar 100 cm
HSB10012-050	100 x 12 Stock Bar 50 cm
HSB10012-100	100 X 12 Stock Bar 100 cm
HSB10016-050	100 X 16 Stock Bar 50 cm
HSB10016-100	100 X 16 Stock Bar 100 cm
HSB10020-050	100 x 20 Stock Bar 50 cm
HSB10020-100	100 X 20 Stock Bar 100 cm
HSB10025-050	100 X 25 Stock Bar 50 cm
HSB10025-100	100 X 25 Stock Bar 100 cm
HSB10032-050	100 X 32 Stock Bar 50 cm
HSB10032-100	100 X 32 Stock Bar 100 cm
HSB10040-050	100 X 40 Stock Bar 50 cm
HSB10040-100	100 x 40 Stock Bar 100 cm

Product Code	Description
HSB10050-050	100 X 50 Stock Bar 50 cm
HSB10050-100	100 X 50 Stock Bar 100 cm
HSB1006-050	100 X 6 Stock Bar 50 cm
HSB1006-100	100 X 6 Stock Bar 100 cm
HSB13006-050	130 X 6 Stock Bar 50 cm
HSB13006-100	130 X 6 Stock Bar 100 cm
HSB13010-050	130 X 10 Stock Bar 50 cm
HSB13010-100	130 X 10 Stock Bar 100 cm
HSB13012-050	130 X 12 Stock Bar 50 cm
HSB13012-100	130 X 12 Stock Bar 100 cm
HSB13016-050	130 X 16 Stock Bar 50 cm
HSB13016-100	130 X 16 Stock Bar 100 cm
HSB13020-050	130 X 20 Stock Bar 50 cm

Continues next page.



Available in 50 cm and 100 cm lengths. Thickness specified before grinding.

Product Code	Description
HSB13020-100	130 X 20 Stock Bar 100 cm
HSB13025-050	130 X 25 Stock Bar 50 cm
HSB13025-100	130 X 25 Stock Bar 100 cm
HSB13030-050	130 X 30 Stock Bar 50 cm
HSB13030-100	130 X 30 Stock Bar 100 cm
HSB13040-050	130 x 40 Stock Bar 50 cm
HSB13040-100	130 X 40 Stock Bar 100 cm
HSB13050-050	130 X 50 Stock Bar 50 cm
HSB13050-100	130 X 50 Stock Bar 100 cm
HSB15010-050	150 X 10 Stock Bar 50 cm
HSB15010-100	150 X 10 Stock Bar 100 cm
HSB15012-050	150 X 12 Stock Bar 50 cm
HSB15012-100	150 X 12 Stock Bar 100 cm
HSB15016-050	150 X 16 Stock Bar 50 cm
HSB15016-100	150 X 16 Stock Bar 100 cm
HSB15020-050	150 X 20 Stock Bar 50 cm
HSB15020-100	150 X 20 Stock Bar 100 cm
HSB15025-050	150 X 25 Stock Bar 50 cm
HSB15025-100	150 X 25 Stock Bar 100 cm
HSB15032-050	150 X 32 Stock Bar 50 cm
HSB15032-100	150 X 35 Stock Bar 100 cm
HSB15040-050	150 X 40 Stock Bar 50 cm
HSB15040-100	150 X 40 Stock Bar 100 cm
HSB15050-050	150 X 50 Stock Bar 50 cm
HSB15050-100	150 X 50 Stock Bar 100 cm
HSB1506-050	150 X 6 Stock Bar 50 cm
HSB1506-100	150 X 6 Stock Bar 100 cm
HSB18012-050	180 X 12 Stock Bar 50 cm
HSB18012-100	180 X 12 Stock Bar 100 cm
HSB18020-050	180 X 20 Stock Bar 50 cm
HSB18020-100	180 X 20 Stock Bar 100 cm
HSB18025-050	180 X 25 Stock Bar 50 cm
HSB18025-100	180 X 25 Stock Bar 100 cm
HSB18030-050	180 X 30 Stock Bar 50 cm
HSB18030-100	180 X 30 Stock Bar 100 cm
HSB18040-050	180 X 40 Stock Bar 50 cm
HSB18050-050	180 X 50 Stock Bar 50 cm
HSB18050-100	180 X 50 Stock Bar 100 cm
HSB18060-050	180 X 60 Stock Bar 50 cm

Product Code	Description
HSB20012-050	200 X 12 Stock Bar 50 cm
HSB20012-100	200 X 12 Stock Bar 100 cm
HSB20016-050	200 X 16 Stock Bar 50 cm
HSB20016-100	200 X 16 Stock Bar 100 cm
HSB20020-050	200 X 20 Stock Bar 50 cm
HSB20020-100	200 X 20 Stock Bar 100 cm
HSB20025-050	200 X 25 Stock Bar 50 cm
HSB20025-100	200 X 25 Stock Bar 100 cm
HSB20030-050	200 X 30 Stock Bar 50 cm
HSB20030-100	200 X 30 Stock Bar 100 cm
HSB20040-050	200 X 40 Stock Bar 50 cm
HSB20040-100	200 X 40 Stock Bar 100 cm
HSB20050-050	200 X 50 Stock Bar 50 cm
HSB20050-100	200 X 50 Stock Bar 100 cm
HSB25010-050	250 X 10 Stock Bar 50 cm
HSB25010-100	250 X 10 Stock Bar 100 cm
HSB25012-050	250 X 12 Stock Bar 50 cm
HSB25012-100	250 X 12 Stock Bar 100 cm
HSB25016-050	250 X 16 Stock Bar 50 cm
HSB25016-100	250 X 16 Stock Bar 100 cm
HSB25020-050	250 X 20 Stock Bar 50 cm
HSB25020-100	250 X 20 Stock Bar 100 cm
HSB25025-050	250 X 25 Stock Bar 50 cm
HSB25025-100	250 X 25 Stock Bar 100 cm
HSB25030-050	250 X 30 Stock Bar 50 cm
HSB25030-100	250 X 30 Stock Bar 100 cm
HSB25040-100	250 X 40 Stock Bar 100 cm
HSB25050-050	250 X 50 Stock Bar 50 cm
HSB25050-100	250 X 50 Stock Bar 100 cm
HSB25060-050	250 X 60 Stock Bar 50 cm
HSB25060-100	250 X 60 Stock Bar 100 cm
HSB30012-100	300 X 12 Stock Bar 100 cm
HSB30016-050	300 X 16 Stock Bar 50 cm
HSB30016-100	300 X 16 Stock Bar 100 cm
HSB30020-050	300 X 20 Stock Bar 50 cm
HSB30020-100	300 X 20 Stock Bar 100 cm
HSB30025-050	300 X 25 Stock Bar 50 cm
HSB30025-100	300 X 25 Stock Bar 100 cm

Continues next page.



Available in 50 cm and 100 cm lengths. Thickness specified before grinding.

Product Code	Description
HSB10010-050	100 x 10 Stock Bar 50 cm
HSB10010-100	100 X 10 Stock Bar 100 cm
HSB10012-050	100 x 12 Stock Bar 50 cm
HSB10012-100	100 X 12 Stock Bar 100 cm
HSB10016-050	100 X 16 Stock Bar 50 cm
HSB10016-100	100 X 16 Stock Bar 100 cm
HSB10020-050	100 x 20 Stock Bar 50 cm
HSB10020-100	100 X 20 Stock Bar 100 cm
HSB10025-050	100 X 25 Stock Bar 50 cm
HSB10025-100	100 X 25 Stock Bar 100 cm
HSB10032-050	100 X 32 Stock Bar 50 cm
HSB10032-100	100 X 32 Stock Bar 100 cm
HSB10040-050	100 X 40 Stock Bar 50 cm
HSB10040-100	100 x 40 Stock Bar 100 cm
HSB10050-050	100 X 50 Stock Bar 50 cm
HSB10050-100	100 X 50 Stock Bar 100 cm
HSB1006-050	100 X 6 Stock Bar 50 cm
HSB1006-100	100 X 6 Stock Bar 100 cm
HSB13006-050	130 X 6 Stock Bar 50 cm
HSB13006-100	130 X 6 Stock Bar 100 cm
HSB13010-050	130 X 10 Stock Bar 50 cm
HSB13010-100	130 X 10 Stock Bar 100 cm
HSB13012-050	130 X 12 Stock Bar 50 cm
HSB13012-100	130 X 12 Stock Bar 100 cm
HSB13016-050	130 X 16 Stock Bar 50 cm
HSB13016-100	130 X 16 Stock Bar 100 cm
HSB13020-050	130 X 20 Stock Bar 50 cm
HSB13020-100	130 X 20 Stock Bar 100 cm
HSB13025-050	130 X 25 Stock Bar 50 cm
HSB13025-100	130 X 25 Stock Bar 100 cm
HSB13030-050	130 X 30 Stock Bar 50 cm
HSB13030-100	130 X 30 Stock Bar 100 cm
HSB13040-050	130 x 40 Stock Bar 50 cm
HSB13040-100	130 X 40 Stock Bar 100 cm
HSB13050-050	130 X 50 Stock Bar 50 cm
HSB13050-100	130 X 50 Stock Bar 100 cm
HSB15010-050	150 X 10 Stock Bar 50 cm
HSB15010-100	150 X 10 Stock Bar 100 cm
HSB15012-050	150 X 12 Stock Bar 50 cm
HSB15012-100	150 X 12 Stock Bar 100 cm
HSB15016-050	150 X 16 Stock Bar 50 cm
HSB15016-100	150 X 16 Stock Bar 100 cm

Product Code	Description
HSB15020-050	150 X 20 Stock Bar 50 cm
HSB15020-100	150 X 20 Stock Bar 100 cm
HSB15025-050	150 X 25 Stock Bar 50 cm
HSB15025-100	150 X 25 Stock Bar 100 cm
HSB15032-050	150 X 32 Stock Bar 50 cm
HSB15032-100	150 X 35 Stock Bar 100 cm
HSB15040-050	150 X 40 Stock Bar 50 cm
HSB15040-100	150 X 40 Stock Bar 100 cm
HSB15050-050	150 X 50 Stock Bar 50 cm
HSB15050-100	150 X 50 Stock Bar 100 cm
HSB1506-050	150 X 6 Stock Bar 50 cm
HSB1506-100	150 X 6 Stock Bar 100 cm
HSB18012-050	180 X 12 Stock Bar 50 cm
HSB18012-100	180 X 12 Stock Bar 100 cm
HSB18020-050	180 X 20 Stock Bar 50 cm
HSB18020-100	180 X 20 Stock Bar 100 cm
HSB18025-050	180 X 25 Stock Bar 50 cm
HSB18025-100	180 X 25 Stock Bar 100 cm
HSB18030-050	180 X 30 Stock Bar 50 cm
HSB18030-100	180 X 30 Stock Bar 100 cm
HSB18040-050	180 X 40 Stock Bar 50 cm
HSB18050-050	180 X 50 Stock Bar 50 cm
HSB18050-100	180 X 50 Stock Bar 100 cm
HSB18060-050	180 X 60 Stock Bar 50 cm
HSB20012-050	200 X 12 Stock Bar 50 cm
HSB20012-100	200 X 12 Stock Bar 100 cm
HSB20016-050	200 X 16 Stock Bar 50 cm
HSB20016-100	200 X 16 Stock Bar 100 cm
HSB20020-050	200 X 20 Stock Bar 50 cm
HSB20020-100	200 X 20 Stock Bar 100 cm
HSB20025-050	200 X 25 Stock Bar 50 cm
HSB20025-100	200 X 25 Stock Bar 100 cm
HSB20030-050	200 X 30 Stock Bar 50 cm
HSB20030-100	200 X 30 Stock Bar 100 cm
HSB20040-050	200 X 40 Stock Bar 50 cm
HSB20040-100	200 X 40 Stock Bar 100 cm
HSB20050-050	200 X 50 Stock Bar 50 cm
HSB20050-100	200 X 50 Stock Bar 100 cm
HSB25010-050	250 X 10 Stock Bar 50 cm
HSB25010-100	250 X 10 Stock Bar 100 cm

Continues next page.



Available in 50 cm and 100 cm lengths. Thickness specified before grinding.

Product Code	Description
HSB25012-050	250 X 12 Stock Bar 50 cm
HSB25012-100	250 X 12 Stock Bar 100 cm
HSB25016-050	250 X 16 Stock Bar 50 cm
HSB25016-100	250 X 16 Stock Bar 100 cm
HSB25020-050	250 X 20 Stock Bar 50 cm
HSB25020-100	250 X 20 Stock Bar 100 cm
HSB25025-050	250 X 25 Stock Bar 50 cm
HSB25025-100	250 X 25 Stock Bar 100 cm
HSB25030-050	250 X 30 Stock Bar 50 cm
HSB25030-100	250 X 30 Stock Bar 100 cm
HSB25040-100	250 X 40 Stock Bar 100 cm
HSB25050-050	250 X 50 Stock Bar 50 cm
HSB25050-100	250 X 50 Stock Bar 100 cm
HSB25060-050	250 X 60 Stock Bar 50 cm
HSB25060-100	250 X 60 Stock Bar 100 cm
HSB30012-100	300 X 12 Stock Bar 100 cm
HSB30016-050	300 X 16 Stock Bar 50 cm
HSB30016-100	300 X 16 Stock Bar 100 cm
HSB30020-050	300 X 20 Stock Bar 50 cm
HSB30020-100	300 X 20 Stock Bar 100 cm
HSB30025-050	300 X 25 Stock Bar 50 cm
HSB30025-100	300 X 25 Stock Bar 100 cm
HSB30030-050	300 X 30 Stock Bar 50 cm
HSB30030-100	300 X 30 Stock Bar 100 cm
HSB30040-050	300 X 40 Stock Bar 50 cm
HSB30040-100	300 X 40 Stock Bar 100 cm
HSB30050-050	300 X 50 Stock Bar 50 cm
HSB30050-100	300 X 50 Stock Bar 100 cm
HSB30060-050	300 X 60 Stock Bar 50 cm
HSB30060-100	300 X 60 Stock Bar 100 cm
HSB5010-050	50 X 10 Stock Bar 50 cm
HSB5010-100	50 X 10 Stock Bar 100 cm
HSB5012-050	50 X 12 Stock Bar 50 cm
HSB5012-100	50 X 12 Stock Bar 100 cm
HSB5016-050	50 X 16 Stock Bar 50 cm
HSB5016-100	50 X 16 Stock Bar 100 cm
HSB5020-050	50 X 20 Stock Bar 50 cm
HSB5020-100	50 X 20 Stock Bar 100 cm
HSB5025-050	50 X 25 Stock Bar 50 cm
HSB5025-100	50 X 25 Stock Bar 100 cm
HSB5030-050	50 X 30 Stock Bar 50 cm

Product Code	Description
HSB5030-100	50 X 30 Stock Bar 100 cm
HSB5040-050	50 X 40 Stock Bar 50 cm
HSB5040-100	50 X 40 Stock Bar 100 cm
HSB5050-050	50 X 50 Stock Bar 50 cm
HSB5050-100	50 X 50 Stock Bar 100 cm
HSB506-050	50 X 6 Stock Bar 50 cm
HSB506-100	50 X 6 Stock Bar 100 cm
HSB6512-050	65 X 12 Stock Bar 50 cm
HSB6512-100	65 X 12 Stock Bar 100 cm
HSB6520-050	65 X 20 Stock Bar 50 cm
HSB6520-100	65 X 20 Stock Bar 100 cm
HSB7506-050	75 X 6 Stock Bar 50 cm
HSB7506-100	75 X 6 Stock Bar 100 cm
HSB7510-050	75 X 10 Stock Bar 50 cm
HSB7510-100	75 X 10 Stock Bar 100 cm
HSB7512-050	75 X 12 Stock Bar 50 cm
HSB7512-100	75 X 12 Stock Bar 100 cm
HSB7516-050	75 X 16 Stock Bar 50 cm
HSB7516-100	75 X 16 Stock Bar 100 cm
HSB7520-050	75 X 20 Stock Bar 50 cm
HSB7520-100	75 X 20 Stock Bar 100 cm
HSB7525-050	75 X 25 Stock Bar 50 cm
HSB7525-100	75 X 25 Stock Bar 100 cm
HSB7530-050	75 X 30 Stock Bar 50 cm
HSB7540-050	75 X 40 Stock Bar 50 cm
HSB7540-100	75 X 40 Stock Bar 100 cm
HSB7550-050	75 X 50 Stock Bar 50 cm
HSB7550-100	75 X 50 Stock Bar 100 cm
HSB9012-050	90 X 12 Stock Bar 50 cm
HSB9012-100	90 X 12 Stock Bar 100 cm



Product Code	Description
SHS001	0.001 SHIM Steel 6 inch wide x 100 inch long
SHS002	0.002 SHIM Steel 6 inch wide x 100 inch long
SHS003	0.003 SHIM Steel 6 inch wide x 100 inch long
SHS004	0.004 SHIM Steel 6 inch wide x 100 inch long
SHS005	0.005 SHIM Steel 6 inch wide x 100 inch long
SHS006	0.006 SHIM Steel 6 inch wide x 100 inch long
SHS008	0.008 SHIM Steel 6 inch wide x 100 inch long
SHS010	0.010 SHIM Steel 6 inch wide x 100 inch long
SHS012	0.012 SHIM Steel 6 inch wide x 100 inch long
SHS015	0.015 SHIM Steel 6 inch wide x 100 inch long
SHS020	0.020 SHIM Steel 6 inch wide x 100 inch long
SHSA	Assorted SHIM 12 Pack incl. 6" X 12" X 12pcs of 0.001, 0.0015, 0.002, 0.003, 0.004, 0.005, 0.006, 0.007, 0.008, 0.010, 0.012, 0.015



Urethane Rod - 90 Shore A - Red

Product Code	Rod Dia.
U006-L	6mm
U010-L	10mm
U012-L	12mm
U015-L	15mm
U020-L	20mm
U022-L	22mm
U025-L	25mm
U032-L	32mm
U035-L	35mm
U040-L	40mm
U045-L	45mm
U050-L	50mm
U060	60mm
U075	75mm
U100	100mm
U070	70mm

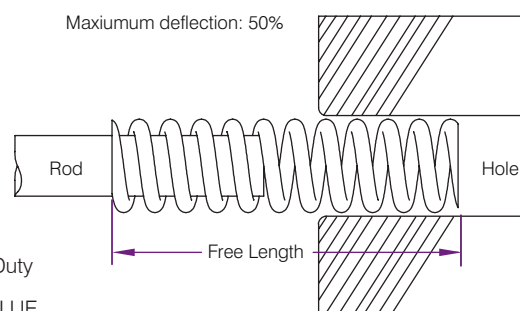


Silicone Chrome Die Springs

Raymond

Medium Duty

Colour - BLUE

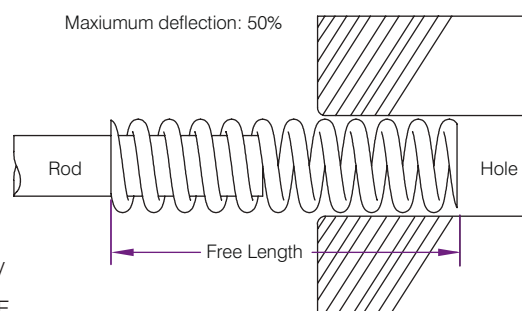


Hole Dia.	Rod Dia.	Product Code	Free Length		lb at 1/10" Defl	Maximum Deflection 50% of Free Length		Deflection for Average life 40% of Free Length		Deflection for Long life 25% of Free Length		Total Travel to Solid	
			mm	in		Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.
3/8 10mm	3/16 4.5mm	DRM0308	25	1.00	5.6	28	0.500	23	0.400	14	0.250	31	0.545
		DRM0310	32	1.25	4.8	30	0.625	24	0.500	15	0.312	35	0.735
		DRM0312	38	1.50	3.8	29	0.750	23	0.600	14	0.375	34	0.906
		DRM0314	44	1.75	3.4	30	0.875	24	0.700	15	0.437	36	1.053
		DRM0316	51	2.00	2.8	28	1.000	22	0.800	14	0.500	35	1.248
		DRM0320	64	2.50	2.4	30	1.250	24	1.000	15	0.625	38	1.581
		DRM0324	76	3.00	1.8	27	1.500	22	1.200	14	0.750	35	1.931
		DRM0396	305	12.00	0.6	36	6.000	29	4.800	18	3.000	48	7.961
1/2 13mm	9/32 7mm	DRM0408	25	1.00	10.0	50	0.500	40	0.400	25	0.250	58	0.578
		DRM0410	32	1.25	9.2	58	0.625	46	0.500	29	0.312	66	0.722
		DRM0412	38	1.50	7.6	57	0.750	46	0.600	29	0.375	68	0.893
		DRM0414	44	1.75	6.8	60	0.875	48	0.700	30	0.437	71	1.048
		DRM0416	51	2.00	6.4	64	1.000	51	0.800	32	0.500	79	1.234
		DRM0420	64	2.50	5.2	65	1.250	52	1.000	33	0.625	81	1.550
		DRM0424	76	3.00	4.0	60	1.500	48	1.200	30	0.750	76	1.891
		DRM0428	89	3.50	3.0	53	1.750	42	1.400	26	0.875	67	2.233
		DRM0436	115	4.50	2.5	53	2.125	45	1.800	28	1.125	71	2.850
		DRM0496	305	12.00	0.8	48	6.000	38	4.800	24	3.000	56	6.931
5/8 16mm	11/32 8.5mm	DRM0508	25	1.00	13.0		0.500	52	0.400	33	0.250	55	0.420
		DRM0510	32	1.25	12.8		0.625	64	0.500	40	0.312	79	0.617
		DRM0512	38	1.50	10.8	81	0.750	65	0.600	41	0.375	88	0.815
		DRM0514	44	1.75	9.6	84	0.875	67	0.700	42	0.437	93	0.969
		DRM0516	51	2.00	8.8	88	1.000	70	0.800	44	0.500	102	1.157
		DRM0520	64	2.50	6.0	75	1.250	60	1.000	38	0.625	87	1.445
		DRM0524	76	3.00	5.6	84	1.500	67	1.200	42	0.750	103	1.840
		DRM0528	89	3.50	4.8	84	1.750	67	1.400	42	0.875	104	2.159
		DRM0532	102	4.00	4.4	88	2.000	70	1.600	44	1.000	113	2.576
		DRM0596	305	12.00	1.4	84	6.000	67	1.800	42	3.000	109	7.782
3/4 19mm	3/8 9.5mm	DRM0608	25	1.00	31.2	156	0.500	125	0.400	78	0.250	170	0.544
		DRM0610	32	1.25	25.6	160	0.625	128	0.500	80	0.312	179	0.699
		DRM0612	38	1.50	20.0	150	0.750	120	0.600	75	0.375	171	0.854
		DRM0614	44	1.75	17.6	154	0.875	123	0.700	77	0.437	176	1.000
		DRM0616	51	2.00	14.4	144	1.000	115	0.800	72	0.500	167	1.162
		DRM0620	64	2.50	12.0	150	1.250	120	1.000	75	0.625	177	1.474
		DRM0624	76	3.00	9.6	144	1.500	115	1.200	72	0.750	171	1.784
		DRM0628	89	3.50	8.0	140	1.750	112	1.400	70	0.875	168	2.094
		DRM0632	102	4.00	7.2	144	2.000	115	1.600	72	1.000	173	2.404
		DRM0636	115	4.50	6.4	144	2.250	115	1.800	72	1.125	174	2.714
		DRM0640	127	5.00	5.6	140	2.500	112	2.000	70	1.250	169	3.024
		DRM0644	139	5.50	4.8	132	2.750	106	2.200	66	1.375	160	3.334
		DRM0648	152	6.00	4.0	120	3.000	96	2.400	60	1.500	146	3.644
		DRM0696	305	12.00	2.4	144	6.000	115	4.800	72	3.000	177	7.364



Silicone Chrome Die Springs
Raymond

Medium Duty
Colour - BLUE

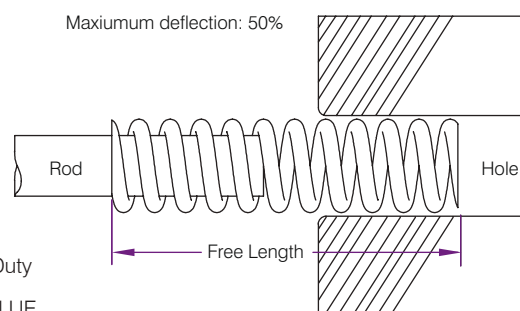


Hole Dia.	Rod Dia.	Product Code	Free Length		lb at 1/10" Defl	Maximum Deflection 50% of Free Length		Deflection for Average life 40% of Free Length		Deflection for Long life 25% of Free Length		Total Travel to Solid	
			mm	in		Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.
1 26mm	1/2 12.5mm	DRM0808	25	1.00	53.6		0.500	214	0.400	134	0.250	264	0.493
		DRM0810	32	1.25	43.6		0.625	218	0.500	136	0.312	272	0.624
		DRM0812	38	1.50	33.6	252	0.750	202	0.600	126	0.375	274	0.816
		DRM0814	44	1.75	28.8	248	0.875	202	0.700	126	0.437	272	0.944
		DRM0816	51	2.00	23.2	232	1.000	186	0.800	116	0.500	258	1.114
		DRM0820	64	2.50	20.0	250	1.250	200	1.000	125	0.625	282	1.411
		DRM0824	76	3.00	15.2	228	1.500	182	1.200	114	0.750	260	1.708
		DRM0828	89	3.50	12.8	224	1.750	80	1.400	112	0.875	266	2.082
		DRM0832	102	4.00	12.0	240	2.000	192	1.600	120	1.000	276	2.303
		DRM0836	115	4.50	10.4	234	2.250	187	1.800	117	1.125	271	2.601
		DRM0840	127	5.00	9.6	240	2.500	192	2.000	120	1.250	278	2.898
		DRM0844	139	5.50	8.8	242	2.750	194	2.200	121	1.375	281	3.195
		DRM0848	152	6.00	8.0	240	3.000	192	2.400	120	1.500	279	3.493
		DRM0856	178	7.00	7.2	252	3.500	202	2.800	126	1.750	294	4.086
		DRM0864	203	8.00	5.6	224	4.000	180	3.200	112	2.000	262	4.682
1 1/4 32mm	5/8 15.5mm	DRM0896	305	12.00	4.0	240	6.000	192	4.800	120	3.000	282	7.062
		DRM1012	38	1.50	49.6	372	0.750	298	0.600	186	0.375	399	0.804
		DRM1014	44	1.75	42.4	371	0.875	296	0.700	185	0.437	402	0.947
		DRM1016	51	2.00	35.2	352	1.000	282	0.800	176	0.500	398	1.130
		DRM1020	64	2.50	28.8	360	1.250	288	1.000	180	0.625	419	1.456
		DRM1024	76	3.00	24.0	360	1.500	288	1.200	180	0.750	428	1.782
		DRM1028	89	3.50	20.0	350	1.750	280	1.400	175	0.875	422	2.108
		DRM1032	102	4.00	17.6	352	2.000	282	1.600	176	1.000	428	2.434
		DRM1036	115	4.50	16.0	360	2.500	288	1.800	180	1.125	442	2.760
		DRM1040	127	5.00	13.6	340	2.500	272	2.000	170	1.250	420	3.086
		DRM1044	139	5.50	12.8	352	2.750	282	2.200	176	1.375	437	3.412
		DRM1048	152	6.00	12.0	360	3.000	288	2.400	180	1.500	449	3.738
		DRM1056	178	7.00	10.4	364	3.500	291	2.800	182	1.750	457	4.390
		DRM1064	203	8.00	8.8	352	4.000	282	3.200	176	2.000	444	5.042
		DRM1080	254	10.00	7.2	360	5.000	288	4.000	180	2.500	457	6.346
		DRM1096	305	12.00	5.6	336	6.000	269	4.800	168	3.000	428	7.650

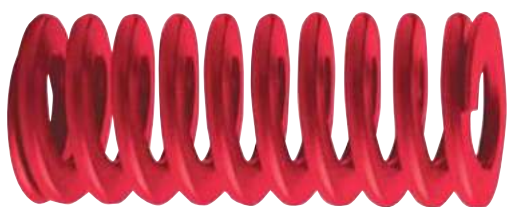


Silicone Chrome Die Springs
Raymond

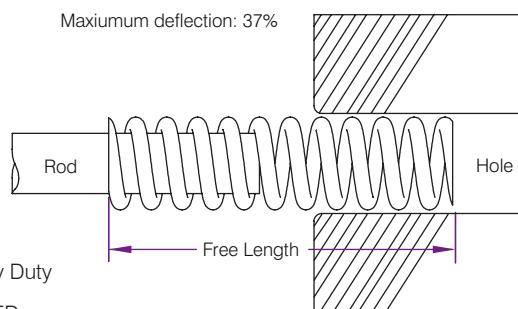
Medium Duty
Colour - BLUE



Hole Dia.	Rod Dia.	Product Code	Free Length		lb at 1/10" Defl	Maximum Deflection 50% of Free Length		Deflection for Average life 40% of Free Length		Deflection for Long life 25% of Free Length		Total Travel to Solid	
			mm	in		Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.
1 1/2 38mm	3/4 19mm	DRM1216	51	2.00	44.8	448	1.000	358	0.800	224	0.500	500	1.116
		DRM1220	64	2.50	36.8	460	1.250	368	1.000	230	0.625	532	1.446
		DRM1224	76	3.00	33.6	504	1.500	403	1.200	252	0.750	597	1.776
		DRM1228	89	3.50	26.4	462	1.750	370	1.400	231	0.875	547	2.072
		DRM1232	102	4.00	21.6	432	2.000	346	1.600	216	1.000	526	2.436
		DRM1236	115	4.50	20.8	468	2.250	374	1.800	234	1.125	575	2.766
		DRM1240	127	5.00	20.0	500	2.500	400	2.000	250	1.250	619	3.096
		DRM1244	139	5.50	16.8	462	2.750	370	2.200	231	1.375	576	3.426
		DRM1248	152	6.00	14.4	432	3.000	346	2.400	216	1.500	540	3.756
		DRM1256	178	7.00	13.6	476	3.500	381	2.800	238	1.750	601	4.416
		DRM1264	203	8.00	12.8	512	4.000	410	3.200	256	2.000	650	5.076
		DRM1280	254	10.00	8.8	440	5.000	352	4.000	220	2.500	563	6.396
2 51mm	1 29mm	DRM1296	305	12.00	8.0	480	6.000	384	4.800	240	3.000	606	7.580
		DRM1620	64	2.50	89.6	1120	1.250	896	1.000	560	0.625	1179	1.316
		DRM1624	76	3.00	76.8	1152	1.500	922	1.200	576	0.750	1243	1.619
		DRM1628	89	3.50	64.8	1134	1.750	907	1.400	567	0.875	1245	1.922
		DRM1632	102	4.00	55.2	1104	2.000	883	1.600	552	1.000	1228	2.224
		DRM1636	115	4.50	47.2	1062	2.250	850	1.800	531	1.125	1193	2.527
		DRM1640	127	5.00	41.6	1040	2.500	832	2.000	520	1.250	1177	2.830
		DRM1644	139	5.50	39.2	1078	2.750	862	2.200	539	1.375	1228	3.132
		DRM1648	152	6.00	35.2	1056	3.000	845	2.400	528	1.500	1209	3.435
		DRM1656	178	7.00	31.2	1092	3.500	874	2.800	546	1.750	1260	4.040
		DRM1664	203	8.00	25.6	1024	4.000	819	3.200	512	2.000	1189	4.645
		DRM1680	254	10.00	20.8	1040	5.000	832	4.000	520	2.500	1218	5.857
		DRM1696	305	12.00	16.8	1008	6.000	806	4.800	504	3.000	1187	7.067

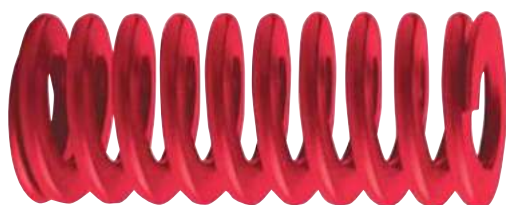


Silicone Chrome Die Springs
Raymond



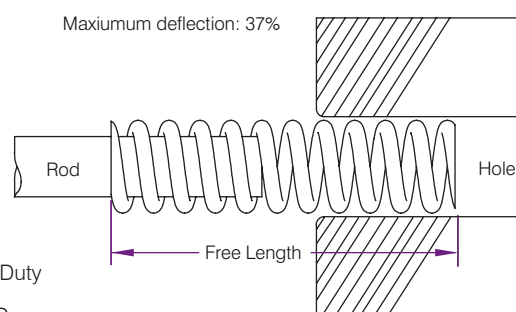
Medium/Heavy Duty
Colour - RED

Hole Dia.	Rod Dia.	Product Code	Free Length		lb at 1/10" Defl	Maximum Deflection 37% of Free Length		Deflection for Average life 25% of Free Length		Deflection for Long life 20% of Free Length		Total Travel to Solid	
			mm	in.		Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.
3/8 10mm	3/16 4.5mm	DRMH0308	25	1.00	9.0	33	0.370	23	0.250	17	0.200	41	0.456
		DRMH0310	32	1.25	74.3	34	0.462	23	0.312	18	0.250	45	0.611
		DRMH0312	38	1.50	6.7	37	0.555	25	0.375	20	0.300	54	0.802
		DRMH0314	44	1.75	5.8	35	0.647	25	0.437	20	0.250	52	0.922
		DRMH0316	51	2.00	5.0	37	0.740	25	0.500	20	0.400	53	1.054
		DRMH0320	64	2.50	4.2	39	0.925	26	0.625	21	0.500	56	1.341
		DRMH0324	76	3.00	3.0	33	1.110	23	0.750	18	0.600	48	1.605
		DRMH0396	305	12.00	0.9	40	4.440	27	3.000	22	2.400	62	7.081
1/2 13mm	9/32 7mm	DRMH0408	25	1.00	16.8	62	0.370	42	0.250	34	0.200	84	0.499
		DRMH0410	32	1.25	13.9	64	0.462	43	0.312	35	0.250	90	0.647
		DRMH0412	38	1.50	12.0	67	0.555	45	0.375	36	0.300	97	0.811
		DRMH0414	44	1.75	10.4	67	0.647	45	0.437	36	0.350	100	0.962
		DRMH0416	51	2.00	8.7	64	0.740	44	0.500	35	0.400	96	1.108
		DRMH0420	64	2.50	6.8	63	0.925	43	0.625	34	0.500	95	1.404
		DRMH0424	76	3.00	2.7	63	1.110	43	0.750	34	0.600	98	1.717
		DRMH0428	89	3.50	4.7	61	1.295	41	0.875	33	0.700	94	1.998
5/8 16mm	11/32 8.5mm	DRMH0496	3.5	12.00	1.2	53	4.440	36	3.000	29	2.400	79	6.616
		DRMH0508	25	1.00	27.7	102	0.370	69	0.250	55	0.200	106	0.383
		DRMH0510	32	1.25	20.8	96	0.462	65	0.312	52	0.250	104	0.498
		DRMH0512	38	1.50	19.0	105	0.555	71	0.375	57	0.300	126	0.664
		DRMH0514	44	1.75	16.8	109	0.647	73	0.437	59	0.350	141	0.837
		DRMH0516	51	2.00	14.8	110	0.740	74	0.500	59	0.400	148	0.997
		DRMH0520	64	2.50	11.5	106	0.925	72	0.625	58	0.500	143	1.246
		DRMH0524	76	3.00	10.0	111	1.110	75	0.750	60	0.600	156	1.558
3/4 19mm	3/8 9.5mm	DRMH0528	89	3.50	8.5	110	1.295	74	0.875	60	0.700	155	1.828
		DRMH0532	102	4.00	7.6	112	1.482	76	1.000	61	0.800	166	2.182
		DRMH0596	305	12.00	2.7	120	4.440	81	3.000	65	2.400	184	6.817
		DRMH0608	25	1.00	57.6	213	0.370	144	0.250	115	0.200	259	0.450
		DRMH0610	32	1.25	44.8	207	0.462	140	0.361	112	0.250	265	0.592
		DRMH0612	38	1.50	32.0	178	0.555	120	0.375	96	0.300	235	0.735
		DRMH0614	44	1.75	28.8	186	0.647	126	0.437	101	0.350	252	0.874
		DRMH0616	51	2.00	24.8	184	0.740	124	0.500	99	0.400	253	1.020
Wire 0.061 x 0.093	Wire 0.081 x 0.117	DRMH0620	64	2.50	19.2	178	0.925	120	0.625	96	0.500	251	1.305
		DRMH0624	76	3.00	14.4	160	1.110	108	0.750	86	0.600	229	1.590
		DRMH0628	89	3.50	12.8	166	1.295	112	0.875	90	0.700	240	1.875
		DRMH0632	102	4.00	12.0	178	1.480	120	1.000	96	0.800	259	2.160
		DRMH0636	115	4.50	11.2	186	1.665	136	1.125	101	0.900	274	2.445
		DRMH0640	127	5.00	10.4	192	1.850	130	1.250	104	1.000	286	2.753
		DRMH0644	139	5.50	9.6	195	2.035	132	1.375	106	1.100	289	3.014
		DRMH0648	152	6.00	8.0	178	2.220	120	1.500	96	1.200	264	3.300
Wire 0.93 x 0.156	Wire 0.93 x 0.156	DRMH0696	305	12.00	3.6	160	4.440	108	3.000	86	2.400	232	6.455

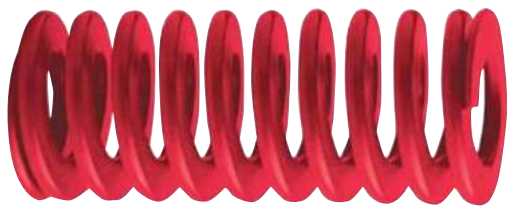


Silicone Chrome Die Springs
Raymond

Medium/Heavy Duty
Colour - RED

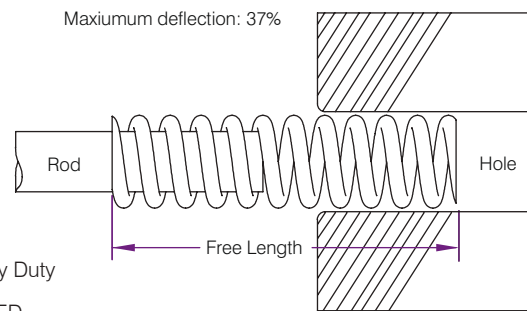


Hole Dia.	Rod Dia.	Product Code	Free Length		lb at 1/10" Defl	Maximum Deflection 37% of Free Length		Deflection for Average life 25% of Free Length		Deflection for Long life 20% of Free Length		Total Travel to Solid	
			mm	in.		Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.
1 26mm	1/2 12.5mm	DRMH0808	25	1.00	72.0	266	0.370	180	0.250	144	0.200	297	0.412
		DRMH0810	32	1.25	62.4	288	0.462	195	0.312	156	0.250	300	0.481
		DRMH0812	38	1.50	49.6	275	0.555	186	0.375	149	0.300	350	0.706
		DRMH0814	44	1.75	44.0	285	0.647	192	0.437	154	0.350	364	0.828
		DRMH0816	51	2.00	36.8	272	0.740	184	0.500	147	0.400	368	1.000
		DRMH0820	64	2.50	28.8	266	0.925	180	0.625	144	0.500	373	1.295
		DRMH0824	76	3.00	23.2	258	1.110	174	0.750	139	0.600	369	1.589
		DRMH0828	89	3.50	21.6	280	1.295	189	0.875	151	0.700	407	1.883
		DRMH0832	102	4.00	18.4	272	1.480	184	1.000	147	0.800	401	2.179
		DRMH0836	115	4.50	15.2	253	1.665	171	1.125	137	0.900	376	2.471
		DRMH0840	127	5.00	14.4	266	1.850	180	1.250	144	1.000	398	2.766
		DRMH0844	139	5.50	12.8	260	2.035	176	1.375	141	1.100	377	2.942
		DRMH0848	152	6.00	11.2	249	2.220	168	1.500	134	1.200	362	3.236
		DRMH0856	178	7.00	9.6	249	2.590	168	1.750	134	1.400	367	3.825
		DRMH0864	203	8.00	8.8	260	2.960	176	2.000	141	1.600	388	4.413
		DRMH0896	305	12.00	5.6	249	4.440	168	3.000	134	2.400	379	6.767
1 1/4 32mm	5/8 15.5mm	DRMH1012	38	1.50	114.4	635	0.555	429	0.375	343	0.300	752	0.657
		DRMH1014	44	1.75	100.8	652	0.647	440	0.437	353	0.350	790	0.784
		DRMH1016	51	2.00	86.4	639	0.740	432	0.500	346	0.400	792	0.917
		DRMH1020	64	2.50	62.4	577	0.925	390	0.625	312	0.500	734	1.176
		DRMH1024	76	3.00	51.2	568	1.110	384	0.750	307	0.600	735	1.435
		DRMH1028	89	3.50	44.0	570	1.295	385	0.875	308	0.700	745	1.694
		DRMH1032	102	4.00	36.8	545	1.480	368	1.000	294	0.800	719	1.954
		DRMH1036	115	4.50	32.0	533	1.665	360	1.125	288	0.900	708	2.213
		DRMH1040	127	5.00	27.2	503	1.850	340	1.250	272	1.000	672	2.472
		DRMH1044	139	5.50	26.4	537	2.035	363	1.375	290	1.100	720	2.731
		DRMH1048	152	6.00	23.2	515	2.220	348	1.500	278	1.200	712	3.071
		DRMH1056	178	7.00	20.0	518	2.590	350	1.750	280	1.400	702	3.509
		DRMH1064	203	8.00	18.4	545	2.960	368	2.000	294	1.600	741	4.028
		DRMH1080	254	10.00	12.8	474	3.700	320	2.500	256	2.000	648	5.065
		DRMH1096	305	12.00	11.2	497	4.440	336	3.000	269	2.400	683	6.102



Silicone Chrome Die Springs
Raymond

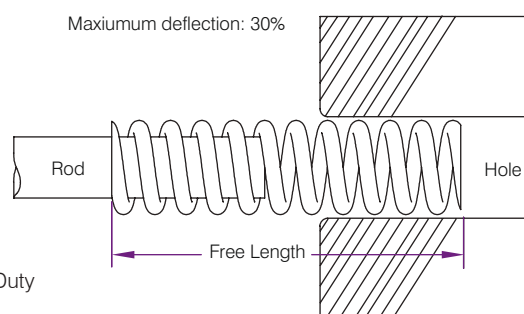
Medium/Heavy Duty
Colour - RED



Hole Dia.	Rod Dia.	Product Code	Free Length		lb at 1/10" Defl	Maximum Deflection 37% of Free Length		Deflection for Average life 25% of Free Length		Deflection for Long life 20% of Free Length		Total Travel to Solid	
			mm	in		Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.
1 1/2 38mm	3/4 19mm	DRMH1216	51	2.00	108.0	799	0.740	540	0.500	432	0.400	966	0.894
		DRMH1220	64	2.50	85.6	792	0.925	535	0.625	428	0.500	988	1.154
		DRMH1224	76	3.00	62.4	693	1.100	468	0.750	374	0.600	882	1.414
		DRMH1228	89	3.50	52.8	684	1.295	462	0.875	370	0.700	883	1.673
		DRMH1232	102	4.00	48.0	710	1.480	480	1.000	384	0.800	928	1.933
		DRMH1236	115	4.50	43.2	719	1.665	486	1.125	389	0.900	947	2.192
		DRMH1240	127	5.00	36.8	681	1.850	460	1.250	368	1.000	902	2.452
		DRMH1244	139	5.50	34.4	700	2.035	473	1.375	378	1.100	933	2.712
		DRMH1248	152	6.00	30.4	675	2.220	456	1.500	365	1.200	903	2.971
	Wire 0.187 x 0.312	DRMH1256	178	7.00	26.4	684	2.590	462	1.750	370	1.400	934	3.359
		DRMH1264	203	8.00	20.8	616	2.960	416	2.000	333	1.600	844	4.058
		DRMH1280	254	10.00	17.6	651	3.700	440	2.500	352	2.000	907	5.154
		DRMH1296	305	12.00	14.4	639	4.440	432	3.000	346	2.400	883	6.135
2 51mm	1 25mm	DRMH1620	64	2.50	118.4	1095	0.925	740	0.625	592	0.500	1326	1.120
		DRMH1624	76	3.00	96.0	1066	1.110	720	0.750	576	0.600	1334	1.390
		DRMH1628	89	3.50	80.0	1036	1.295	700	0.875	560	0.700	1328	1.660
		DRMH1632	102	4.00	66.4	983	1.480	664	1.000	531	0.800	1282	1.930
		DRMH1636	115	4.50	60.0	999	1.665	675	1.125	540	0.900	1320	2.200
		DRMH1640	127	5.00	56.0	1036	1.850	700	1.250	560	1.000	1383	2.470
		DRMH1644	139	5.50	50.4	1026	2.035	693	1.375	554	1.100	1381	2.740
		DRMH1648	152	6.00	47.2	1048	2.220	708	1.500	566	1.220	1421	3.010
		DRMH1656	178	7.00	40.0	1036	2.590	700	1.750	560	1.400	1420	3.550
	Wire 0.225 x 0.437	DRMH1664	203	8.00	35.2	1042	2.960	704	2.000	563	1.600	1440	4.090
		DRMH1680	254	10.00	24.0	888	3.700	600	2.500	480	2.000	1241	5.170
		DRMH1696	305	12.00	22.4	995	4.440	672	3.000	538	2.400	1400	6.250



Silicone Chrome Die Springs
Raymond

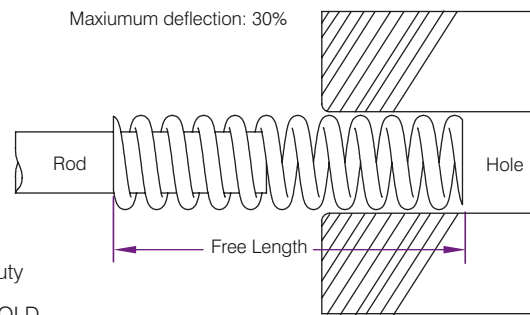


Heavy Duty
Colour - GOLD

Hole Dia.	Rod Dia.	Product Code	Free Length		lb at 1/10" Defl	Maximum Deflection 30% of Free Length		Deflection for Average life 20% of Free Length		Deflection for Long life 15% of Free Length		Total Travel to Solid	
			mm	in		Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.
3/8 10mm	3/16 4.5mm	DRH0308	25	1.00	12.4	37	0.300	25	0.200	18	0.150	44	0.354
		DRH0310	32	1.25	9.8	37	0.375	25	0.250	18	0.187	45	0.463
		DRH0312	38	1.50	9.6	43	0.450	29	0.300	22	0.225	55	0.573
		DRH0314	44	1.75	8.4	44	0.525	29	0.350	22	0.262	58	0.686
		DRH0316	51	2.00	7.2	43	0.600	29	0.400	22	0.300	57	0.792
		DRH0320	64	2.50	6.0	45	0.750	30	0.500	23	0.375	66	1.011
		DRH0324	76	3.00	4.2	38	0.900	25	0.600	19	0.450	51	1.216
		DRH0396	305	12.00	1.2	43	3.600	29	2.400	22	1.800	70	5.818
1/2 13mm	9/32 7mm	DRH0408	25	1.00	23.6	71	0.300	47	0.200	35	0.150	107	0.455
		DRH0410	32	1.25	18.6	70	0.375	47	0.250	35	0.187	109	0.587
		DRH0412	38	1.50	16.4	74	0.450	49	0.300	37	0.225	121	0.737
		DRH0414	44	1.75	13.8	72	0.525	48	0.350	36	0.262	116	0.844
		DRH0416	51	2.00	11.0	66	0.600	44	0.400	33	0.300	110	1.000
		DRH0420	64	2.50	8.4	63	0.750	42	0.500	32	0.375	106	1.264
		DRH0424	76	3.00	7.4	67	0.900	44	0.600	33	0.450	113	1.528
		DRH0428	89	3.50	6.4	67	1.050	45	0.700	34	0.525	116	1.810
5/8 16mm	11/32 8.5mm	DRH0508	25	1.00	42.4	127	0.300	85	0.200	64	0.150	151	0.357
		DRH0510	32	1.25	29.6	111	0.375	74	0.250	55	0.187	140	0.474
		DRH0512	38	1.50	27.2	122	0.450	82	0.300	61	0.225	165	0.606
		DRH0514	44	1.75	24.0	126	0.525	84	0.350	63	0.262	175	0.730
		DRH0516	51	2.00	20.8	125	0.600	83	0.400	62	0.300	179	0.860
		DRH0520	64	2.50	17.0	128	0.750	85	0.500	64	0.375	190	1.118
		DRH0524	76	3.00	14.4	130	0.900	86	0.600	65	0.450	198	1.375
		DRH0528	89	3.50	12.2	128	1.050	85	0.700	64	0.525	199	1.633
		DRH0532	102	4.00	10.8	130	1.200	86	0.800	65	0.600	204	1.890
		DRH0596	305	12.00	4.0	144	3.600	96	2.400	72	1.800	201	5.016
		DRH0608	25	1.00	108.0	324	0.300	216	0.200	162	0.150	324	0.300
		DRH0610	32	1.25	86.8	326	0.375	217	0.250	162	0.187	353	0.407
3/4 19mm	3/8 9.5mm	DRH0612	38	1.50	65.6	295	0.450	197	0.300	148	0.225	337	0.514
		DRH0614	44	1.75	60.0	315	0.525	210	0.350	157	0.262	361	0.601
		DRH0616	51	2.00	49.6	298	0.600	198	0.400	149	0.300	361	0.728
		DRH0620	64	2.50	37.6	282	0.750	188	0.500	141	0.375	354	0.924
		DRH0624	76	3.00	31.2	281	0.900	187	0.600	140	0.450	361	1.156
		DRH0628	89	3.50	26.4	277	1.050	185	0.700	139	0.525	361	1.369
		DRH0632	102	4.00	23.2	278	1.200	186	0.800	139	0.600	367	1.583
		DRH0636	115	4.50	20.0	270	1.350	180	0.900	135	0.675	359	1.797
		DRH0640	127	5.00	17.6	264	1.500	176	1.000	132	0.750	354	2.011
		DRH0646	139	5.50	16.0	264	1.650	176	1.100	132	0.825	356	2.225
		DRH0648	152	6.00	14.4	259	1.800	173	1.200	130	0.900	351	2.438
		DRH0696	305	12.00	7.2	259	3.600	173	2.400	130	1.800	382	5.300



Silicone Chrome Die Springs
Raymond

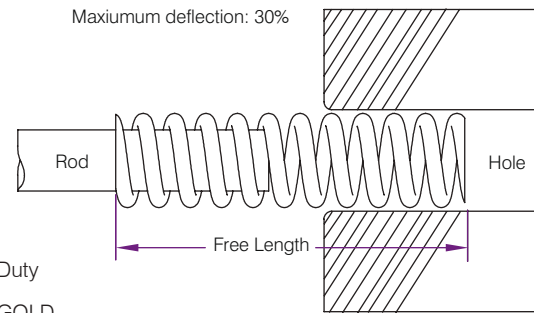


Heavy Duty
Colour - GOLD

Hole Dia.	Rod Dia.	Product Code	Free Length		lb at 1/10" Defl	Maximum Deflection 30% of Free Length		Deflection for Average life 20% of Free Length		Deflection for Long life 15% of Free Length		Total Travel to Solid	
			mm	in		Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.
1 26mm	1/2 12.5mm	DRH0808	25	1.00	208.0		0.270	416	0.200	312	0.150	614	0.295
		DRH0810	32	1.25	171.2		0.380	428	0.250	320	0.187	540	0.315
		DRH0812	38	1.50	118.4	533	0.450	355	0.300	266	0.225	598	0.505
		DRH0814	44	1.75	104.0	546	0.525	364	0.350	272	0.262	655	0.630
		DRH0816	51	2.00	84.0	504	0.600	336	0.400	252	0.300	600	0.714
		DRH0820	64	2.50	68.0	510	0.750	340	0.500	255	0.375	628	0.924
		DRH0824	76	3.00	54.4	490	0.900	326	0.600	245	0.450	617	1.134
		DRH0828	89	3.50	45.6	479	1.050	319	0.700	239	0.525	612	1.343
		DRH0832	102	4.00	40.0	480	1.200	320	0.800	240	0.600	621	1.553
		DRH0836	115	4.50	35.2	475	1.350	317	0.900	238	0.675	621	1.763
		DRH0840	127	5.00	31.2	468	1.500	312	1.000	234	0.750	615	1.972
		DRH0844	139	5.50	28.8	475	1.650	317	1.100	238	0.825	628	2.182
		DRH0848	152	6.00	25.6	461	1.800	307	1.200	230	0.900	612	2.392
		DRH0856	178	7.00	22.4	470	2.100	314	1.400	235	1.050	630	2.811
		DRH0864	203	8.00	19.2	461	2.400	307	1.600	230	1.200	620	3.230
1 1/4 32mm	5/8 15.5mm	DRH0896	305	12.00	12.0	432	3.600	288	2.400	216	1.800	589	4.908
		DRH1012	38	1.50	212.0	954	0.450	636	0.300	477	0.225	954	0.450
		DRH1014	44	1.75	181.6	953	0.525	636	0.350	476	0.262	1017	0.560
		DRH1016	51	2.00	149.6	898	0.600	598	0.400	449	0.300	950	0.635
		DRH1018	64	2.50	117.6	882	0.750	588	0.500	441	0.375	964	0.820
		DRH1020	76	3.00	95.2	857	0.900	571	0.600	428	0.450	957	1.005
		DRH1024	89	3.50	75.2	790	1.050	526	0.700	395	0.525	895	1.190
		DRH1028	102	4.00	66.4	797	1.200	531	0.800	398	0.600	913	1.375
		DRH1032	115	4.50	58.4	788	1.350	526	0.900	394	0.675	911	1.560
		DRH1036	127	5.00	49.6	744	1.500	496	1.000	372	0.750	866	1.745
		DRH1040	139	5.50	47.2	779	1.650	519	1.100	389	0.828	911	1.930
		DRH1048	152	6.00	42.4	763	1.800	509	1.200	382	0.900	897	2.115
		DRH1056	178	7.00	36.8	773	2.100	515	1.400	386	1.050	914	2.485
		DRH1064	203	8.00	32.8	787	2.400	525	1.600	394	1.200	936	2.855
		DRH1080	254	10.00	25.6	768	3.000	512	2.000	384	1.500	920	3.595
		DRH1096	305	12.00	20.8	749	3.600	499	2.400	374	1.800	902	4.335



Silicon Chrome Die Springs
Raymond



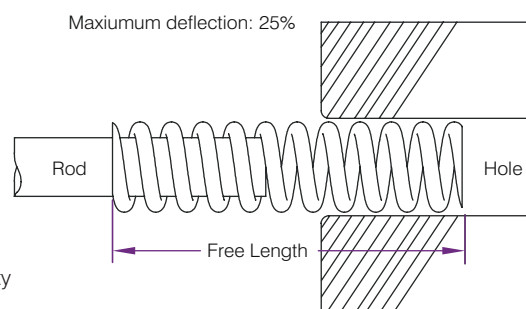
Heavy Duty
Colour - GOLD

Hole Dia.	Rod Dia.	Product Code	Free Length		lb at 1/10" Defl	Maximum Deflection 30% of Free Length		Deflection for Average life 20% of Free Length		Deflection for Long life 15% of Free Length		Total Travel to Solid	
			mm	in		Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.
1 1/2 38mm	3/4 19mm	DRH1216	51	2.00	190.4	1142	0.600	762	0.400	571	0.300	1346	0.707
		DRH1220	64	2.50	148.8	1116	0.750	744	0.500	558	0.375	1446	0.972
		DRH1224	76	3.00	122.4	1102	0.900	734	0.600	551	0.450	1443	1.179
		DRH1228	89	3.50	106.4	1117	1.050	745	0.700	559	0.525	1535	1.443
		DRH1232	102	4.00	91.2	1094	1.200	730	0.800	547	0.600	1505	1.650
		DRH1236	115	4.50	78.4	1058	1.350	706	0.900	529	0.675	1478	1.885
		DRH1240	127	5.00	71.2	1068	1.500	712	1.000	534	0.750	1509	2.120
		DRH1244	139	5.50	64.0	1056	1.650	704	1.100	528	0.825	1508	2.357
		DRH1248	152	6.00	58.4	1051	1.800	701	1.200	526	0.900	1514	2.592
		DRH1256	178	7.00	49.6	1042	2.100	694	1.400	521	1.050	1520	3.064
		DRH1264	203	8.00	43.2	1037	2.400	691	1.600	518	1.200	1527	3.535
		DRH1280	254	10.00	34.4	1032	3.000	688	2.000	516	1.500	1540	4.477
2 51mm	1 26mm	DRH1296	305	12.00	28.8	1037	3.600	691	2.400	518	1.800	1561	5.420
		DRH1620	64	2.50	220.0	1650	0.750	1100	0.500	825	0.375	1982	0.901
		DRH1624	76	3.00	185.6	1670	0.900	1114	0.600	835	0.450	2189	1.147
		DRH1628	89	3.50	160.0	1680	1.050	1220	0.700	840	0.525	2227	1.392
		DRH1632	102	4.00	133.6	1603	1.200	1069	0.800	802	0.600	2188	1.638
		DRH1636	115	4.50	117.6	1588	1.350	1058	0.900	794	0.675	2216	1.884
		DRH1640	127	5.00	104.0	1560	1.500	1040	1.000	780	0.750	2214	2.129
		DRH1644	139	5.50	92.8	1531	1.650	1021	1.100	766	0.825	2204	2.375
		DRH1648	152	6.00	83.2	1498	1.800	998	1.200	749	0.900	2181	2.621
		DRH1656	178	7.00	73.6	1546	2.100	1030	1.400	773	1.050	2290	3.112
		DRH1664	203	8.00	64.0	1536	2.400	1024	1.600	768	1.200	2306	3.603
		DRH1680	254	10.00	48.8	1464	3.000	976	2.000	732	1.500	2238	4.586
		DRH1696	305	12.00	40.0	1440	3.600	960	2.400	720	1.800	2227	5.568

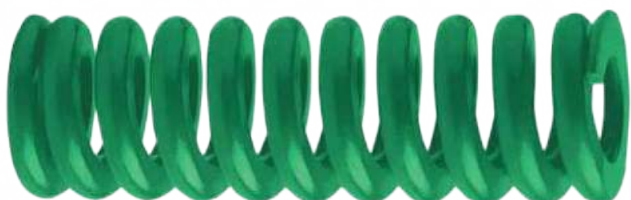


Silicone Chrome Die Springs
Raymond

Extra Heavy Duty
Colour - GREEN

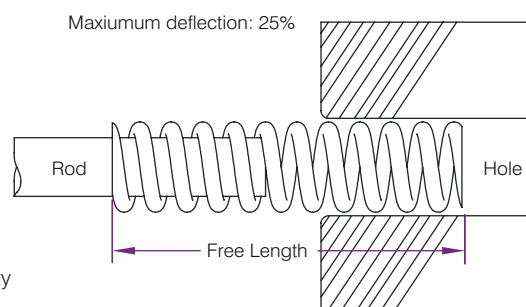


Hole Dia.	Rod Dia.	Product Code	Free Length		lb at 1/10" Defl	Maximum Deflection 25% of Free Length		Deflection for Average life 20% of Free Length		Deflection for Long life 15% of Free Length		Total Travel to Solid	
			mm	in.		Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.
3/8 10mm	3/16 4.5mm	DRX0308	25	1	22	55	0.250	44	0.200	33	0.150	56	0.275
		DRX0310	32	1.25	17	53.2	0.312	43	0.250	32	0.187	54	0.350
		DRX0312	38	1.5	14.5	54.4	0.375	43	0.300	32	0.225	57	0.440
		DRX0314	44	1.75	11.5	50.4	0.437	39	0.350	29	0.262	55	0.480
		DRX0316	51	2	10	50	0.500	40	0.400	30	0.300	54	0.600
		DRX0320	64	2.5	8	50	0.625	40	0.500	30	0.375	55	0.770
		DRX0324	76	3	6.5	48.8	0.750	39	0.600	29	0.450	55	0.920
		DRX0396	305	12	1.5	45	3.000	36	2.400	27	1.800	58	3.850
1/2 13mm	9/32 7mm	DRX0408	25	1	32	80	0.250	64	0.200	48	0.150	103	0.295
		DRX0410	32	1.25	24	75.1	0.312	60	0.250	45	0.187	97	0.360
		DRX0412	38	1.5	20	75	0.375	60	0.300	45	0.225	103	0.470
		DRX0414	44	1.75	17	74.5	0.437	60	0.350	45	0.262	99	0.530
		DRX0416	51	2	14	70	0.500	56	0.400	42	0.300	126	0.680
		DRX0420	64	2.5	11.5	71.9	0.625	56	0.500	42	0.375	102	0.800
		DRX0424	76	3	9	67.5	0.750	54	0.600	41	0.450	102	0.980
5/8 16mm	11/32 8.5mm	DRX0508	25	1	63	157.5	0.250	126	0.200	95	0.150	208	0.280
		DRX0510	32	1.25	47	147.1	0.312	117	0.250	88	0.187	187	0.340
		DRX0512	38	1.5	38	142.5	0.375	114	0.300	86	0.225	184	0.420
		DRX0514	44	1.75	32	140.2	0.437	112	0.350	84	0.262	181	0.490
		DRX0516	51	2	29	145	0.500	116	0.400	87	0.300	180	0.560
		DRX0520	64	2.5	22	137.5	0.625	110	0.500	83	0.375	1.95	0.780
		DRX0524	76	3	18	135	0.750	108	0.600	81	0.450	200	0.980
3/4 19mm	3/8 9.5mm	DRX0608	25	1	140	350	0.250	280	0.200	210	0.150	335	0.215
		DRX0610	32	1.25	110	344.3	0.312	275	0.250	206	0.187	340	0.300
		DRX0612	38	1.5	89	333.8	0.375	268	0.300	200	0.225	420	0.460
		DRX0614	44	1.75	75	328.5	0.437	264	0.350	198	0.262	350	0.460
		DRX0616	51	2	63.5	317.5	0.500	254	0.400	190	0.300	330	0.510
		DRX0620	64	2.5	50	312.5	0.625	250	0.500	188	0.375	355	0.710
		DRX0624	76	3	40.5	303.7	0.750	243	0.600	182	0.450	345	0.840
		DRX0628	89	3.5	34.5	301.9	0.875	242	0.700	181	0.525	360	1.040
		DRX0632	102	4	30	300	1.000	240	0.800	180	0.600	360	1.200
		DRX0648	152	6.	19.5	292.5	1.500	234	1.200	176	0.900	380	1.850
1 26mm	1/2 12.5mm	DRX0812	38	1.5	184.8	693	0.375	555	0.300	416	0.225	632	0.342
		DRX0816	51	2	116	580	0.500	464	0.400	348	0.300	567	0.489
		DRX0820	64	2.5	89.6	560	0.625	448	0.500	336	0.375	571	0.637
		DRX0824	76	3	73.6	552	0.750	442	0.600	331	0.450	615	0.835
		DRX0828	89	3.5	62.4	546	0.875	437	0.700	328	0.525	613	0.982
		DRX0832	102	4	55.2	552	1.000	442	0.800	331	0.600	651	1.180
		DRX0840	127	5	43.2	540	1.375	432	1.000	324	0.750	659	1.526
		DRX0848	152	6	36	540	1.500	432	1.200	324	0.900	674	1.871



Silicone Chrome Die Springs
Raymond

Extra Heavy Duty
Colour - GREEN



Hole Dia.	Rod Dia.	Product Code	Free Length		lb at 1/10" Defl	Maximum Deflection 25% of Free Length		Deflection for Average life 20% of Free Length		Deflection for Long life 15% of Free Length		Total Travel to Solid	
			mm	in.		Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.	Pressure Pounds	Length of Defl.
1 1/4 32mm	5/8 15.5mm	DRX1016	51	2	192	960	0.500	768	0.400	577	0.300	1002	0.522
		DRX1020	64	2.5	144	900	0.625	720	0.500	540	0.375	1045	0.726
		DRX1024	76	3	118.4	888	0.750	710	0.600	533	0.450	1102	0.931
		DRX1028	89	3.5	100.8	882	0.875	706	0.700	530	0.525	1144	1.135
		DRX1032	102	4	84	840	1.000	673	0.800	505	0.600	1075	1.280
		DRX1036	115	4.5	78.4	882	1.125	706	0.900	529	0.675	1164	1.485
		DRX1040	127	5	68	850	1.375	680	1.000	510	0.750	1149	1.689
		DRX1048	152	6	56	840	1.500	672	1.200	504	0.900	1142	2.039
1 1/2 38mm	3/4 19mm	DRX1216	51	2	376	1880	0.500	1505	0.400	1128	0.300	1950	0.495
		DRX1220	64	2.5	294.4	1840	0.625	1472	0.500	1104	0.375	1840	0.625
		DRX1224	76	3	231.2	1734	0.750	1387	0.600	1040	0.450	1896	0.820
		DRX1228	89	3.5	196	1715	0.875	1372	0.700	1029	0.525	1911	0.975
		DRX1232	102	4	171.2	1712	1.000	1370	0.800	1027	0.600	2001	1.169
		DRX1236	115	4.5	148	1665	1.125	1332	0.900	999	0.675	2017	1.363
		DRX1240	127	5	136	1700	1.375	1360	1.000	1020	0.750	2118	1.557
		DRX1248	152	6	110.4	1656	1.500	1325	1.200	994	0.900	2147	1.945
2 51mm	1 25mm	DRX1264	203	8	80.8	1616	2.000	1293	1.600	970	1.200	2199	2.721
		DRX1620	64	2.5	381.6	2385	0.625	1908	0.500	1431	0.375	2851	0.747
		DRX1624	76	3	312	2340	0.750	1872	0.600	1404	0.450	2702	0.866
		DRX1628	89	3.5	254.4	2226	0.875	1781	0.700	1336	0.525	2310	0.908
		DRX1632	102	4	220	2200	1.000	1760	0.800	1320	0.600	2691	1.223
		DRX1636	115	4.5	188.8	2124	1.125	1700	0.900	1274	0.675	2622	1.389
		DRX1640	127	5	172.8	2164	1.250	1728	1.000	1296	0.750	2428	1.405
		DRX1648	152	6	141.6	2124	1.500	1700	1.200	1275	0.900	2280	1.610
Wire 0.365 x 0.460		DRX1664	203	8	100	2000	2.000	1600	1.600	1200	1.200	2234	2.234
		DRX1680	254	10	84	2100	2.500	1680	2.000	1260	1.500	2448	2.914
		DRX1696	305	12	71.2	2136	3.000	1710	2.410	1282	1.800	3184	4.472



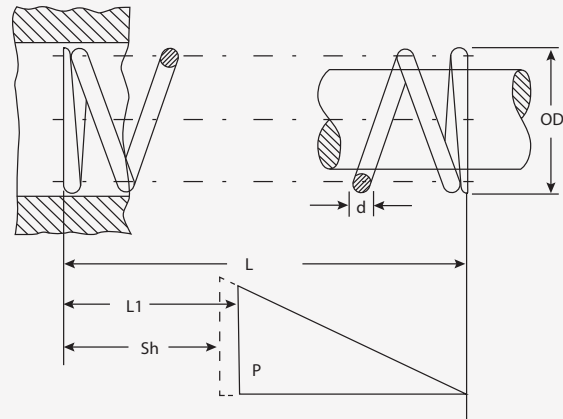
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	mm	mm	mm	mm	mm	N	N/mm
C0120-014-0310	3.05	0.36	7.87	4.24	2.97	5.47	1.51
C0120-014-0500	3.05	0.36	12.70	6.68	4.27	5.47	0.91
C0120-014-0750	3.05	0.36	19.05	9.78	5.97	5.47	0.60
C0120-014-1000	3.05	0.36	25.40	12.90	7.65	5.47	0.44
C0120-014-1250	3.05	0.36	31.75	16.05	9.35	5.47	0.35
C0120-014-1500	3.05	0.36	38.10	19.71	11.02	5.47	0.30
C0120-016-0500	3.05	0.41	12.70	7.11	5.28	8.18	1.45
C0120-016-1250	3.05	0.41	31.75	17.15	11.76	8.18	0.56
C0120-016-1500	3.05	0.41	38.10	21.41	13.82	8.18	0.49
C0120-018-0500	3.05	0.46	12.70	7.75	6.30	11.39	2.29
C0120-018-0750	3.05	0.46	19.05	11.38	9.12	11.39	1.49
C0120-018-1250	3.05	0.46	31.75	19.00	14.20	11.39	0.89
C0120-018-1500	3.05	0.46	38.10	22.61	16.84	11.39	0.74
C0120-020-0500	3.05	0.51	12.70	8.59	7.24	14.72	3.57
C0120-020-0750	3.05	0.51	19.05	12.70	10.34	14.72	2.31
C0120-020-1000	3.05	0.51	25.40	16.81	13.46	14.72	1.72
C0120-020-1250	3.05	0.51	31.75	20.93	16.56	14.72	1.37
C0120-020-1500	3.05	0.51	38.10	25.02	19.66	14.72	1.12
C0120-022-0500	3.05	0.56	12.70	9.04	8.10	19.93	5.45
C0120-022-0750	3.05	0.56	19.05	13.41	11.71	19.93	3.54
C0120-022-1000	3.05	0.56	25.40	17.65	15.24	19.93	2.57
C0120-022-1250	3.05	0.56	31.75	22.02	18.77	19.93	2.05
C0148-023-0440	3.76	0.58	11.18	7.37	6.22	17.97	4.71
C0148-023-1000	3.76	0.58	25.40	16.15	12.57	17.97	1.94
C0180-012-1500	4.57	0.30	38.10	15.24	4.37	2.40	0.11
C0180-014-0500	4.57	0.36	12.70	5.33	2.54	3.74	0.51
C0180-014-0750	4.57	0.36	19.05	7.82	3.30	3.74	0.33
C0180-014-1000	4.57	0.36	25.40	10.16	4.09	3.74	0.25
C0180-014-1250	4.57	0.36	31.75	12.34	4.85	3.74	0.19
C0180-014-1500	4.57	0.36	38.10	14.40	5.64	3.74	0.16
C0180-016-0500	4.57	0.41	12.70	5.21	3.15	5.56	0.74
C0180-016-0750	4.57	0.41	19.05	7.62	4.24	5.56	0.49
C0180-016-1000	4.57	0.41	25.40	10.97	5.18	5.56	0.39
C0180-016-1250	4.57	0.41	31.75	13.08	6.22	5.56	0.30
C0180-016-1500	4.57	0.41	38.10	15.42	7.24	5.56	0.25

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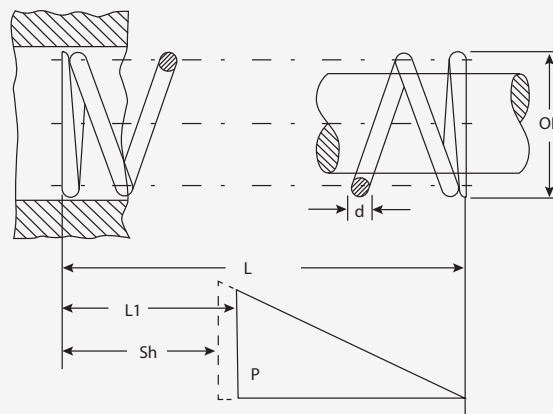
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C0180-018-0500	4.57	0.46	12.70	6.07	3.66	7.83	1.17
C0180-018-0750	4.57	0.46	19.05	8.20	5.26	7.83	0.72
C0180-018-1000	4.57	0.46	25.40	11.43	6.40	7.83	0.56
C0180-018-1250	4.57	0.46	31.75	14.55	7.70	7.83	0.46
C0180-018-1500	4.57	0.46	38.10	16.81	9.02	7.83	0.37
C0180-018-1750	4.57	0.46	44.45	19.61	10.31	7.83	0.32
C0180-020-0500	4.57	0.51	12.70	6.68	4.47	10.19	1.70
C0180-020-0750	4.57	0.51	19.05	9.75	6.07	10.19	1.10
C0180-020-1000	4.57	0.51	25.40	12.83	7.67	10.19	0.81
C0180-020-1500	4.57	0.51	38.10	18.72	10.90	10.19	0.53
C0180-020-1750	4.57	0.51	44.45	22.05	12.50	10.19	0.46
C0180-022-0500	4.57	0.56	12.70	7.11	4.88	13.92	2.49
C0180-022-0750	4.57	0.56	19.05	9.88	7.11	13.92	1.52
C0180-022-1000	4.57	0.56	25.40	13.16	9.02	13.92	1.14
C0180-022-1250	4.57	0.56	31.75	16.46	10.92	13.92	0.91
C0180-022-1500	4.57	0.56	38.10	19.61	12.85	13.92	0.75
C0180-024-0250	4.57	0.61	6.35	4.06	3.63	16.95	7.40
C0180-024-0310	4.57	0.61	7.87	4.90	4.17	16.95	5.71
C0180-024-0380	4.57	0.61	9.65	5.89	4.80	16.95	4.50
C0180-024-0440	4.57	0.61	11.18	6.73	5.33	16.95	3.82
C0180-024-0500	4.57	0.61	12.70	7.57	5.89	16.95	3.31
C0180-024-0560	4.57	0.61	14.22	8.41	6.43	16.95	2.92
C0180-024-0620	4.57	0.61	15.75	9.27	6.96	16.95	2.61
C0180-024-0750	4.57	0.61	19.05	11.10	8.13	16.95	2.14
C0180-024-0880	4.57	0.61	22.35	12.93	9.30	16.95	1.80
C0180-024-1000	4.57	0.61	25.40	14.61	10.36	16.95	1.58
C0180-024-1120	4.57	0.61	28.45	16.28	11.43	16.95	1.40
C0180-024-1250	4.57	0.61	31.75	18.11	12.60	16.95	1.24
C0180-024-1500	4.57	0.61	38.10	21.64	14.86	16.95	1.03
C0180-024-1750	4.57	0.61	44.45	25.15	17.09	16.95	0.88
C0180-024-2000	4.57	0.61	50.80	28.68	19.33	16.95	0.77
C0180-026-0500	4.57	0.66	12.70	7.92	6.27	22.37	4.69
C0180-026-0750	4.57	0.66	19.05	11.56	8.94	22.37	2.98
C0180-026-1000	4.57	0.66	25.40	14.94	11.71	22.37	2.14
C0180-026-1250	4.57	0.66	31.75	18.57	14.27	22.37	1.70
C0180-026-1500	4.57	0.66	38.10	22.12	16.84	22.37	1.40
C0180-026-2000	4.57	0.66	50.80	29.13	21.97	22.37	1.03

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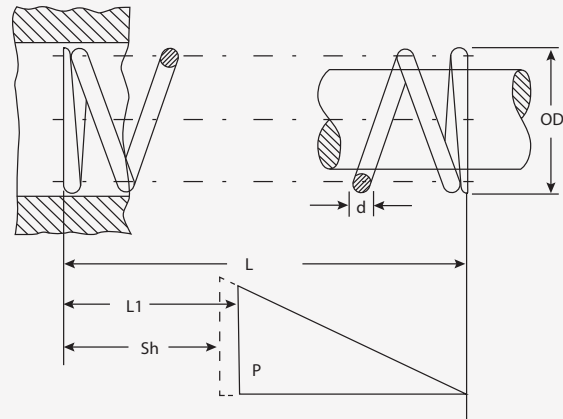
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	mm	mm	mm	mm	mm	N	N/mm
C0180-032-0500	4.57	0.81	12.70	9.25	8.10	39.28	11.36
C0180-032-0750	4.57	0.81	19.05	13.61	11.58	39.28	7.23
C0180-032-1000	4.57	0.81	25.40	17.78	15.44	39.28	5.15
C0180-032-1250	4.57	0.81	31.75	21.92	19.00	39.28	3.99
C0180-032-1500	4.57	0.81	38.10	26.16	22.48	39.28	3.29
C0180-032-2000	4.57	0.81	50.80	34.77	29.46	39.28	2.45
C0210-018-0750	5.33	0.46	19.05	7.49	4.34	6.67	0.58
C0210-018-1500	5.33	0.46	38.10	14.38	7.47	6.67	0.28
C0210-018-1750	5.33	0.46	44.45	17.25	8.48	6.67	0.25
C0210-018-2000	5.33	0.46	50.80	19.00	9.53	6.67	0.21
C0210-022-0250	5.33	0.56	6.35	3.56	2.87	11.52	4.13
C0210-022-1500	5.33	0.56	38.10	18.16	10.13	11.52	0.58
C0210-026-1500	5.33	0.66	38.10	20.68	13.54	18.42	1.05
C0240-020-0500	6.10	0.51	12.70	5.82	3.23	7.78	1.12
C0240-020-1000	6.10	0.51	25.40	11.02	5.08	7.78	0.54
C0240-020-1500	6.10	0.51	38.10	15.88	6.93	7.78	0.35
C0240-020-2000	6.10	0.51	50.80	21.16	8.79	7.78	0.26
C0240-022-1000	6.10	0.56	25.40	10.95	5.99	10.63	0.74
C0240-024-0500	6.10	0.61	12.70	6.45	4.27	12.99	2.08
C0240-024-0750	6.10	0.61	19.05	9.35	5.61	12.99	1.33
C0240-024-1000	6.10	0.61	25.40	12.24	6.96	12.99	0.98
C0240-024-1500	6.10	0.61	38.10	18.03	9.63	12.99	0.65
C0240-024-2000	6.10	0.61	50.80	23.34	12.32	12.99	0.47
C0240-026-0500	6.10	0.66	12.70	7.09	4.29	17.13	3.05
C0240-026-0560	6.10	0.66	14.22	7.57	4.78	17.13	2.57
C0240-026-0750	6.10	0.66	19.05	9.25	6.25	17.13	1.75
C0240-026-1000	6.10	0.66	25.40	12.19	7.95	17.13	1.30
C0240-026-1500	6.10	0.66	38.10	18.14	11.10	17.13	0.86
C0240-026-2000	6.10	0.66	50.80	23.65	14.25	17.13	0.63
C0240-029-0500	6.10	0.74	12.70	7.32	5.61	22.02	4.08
C0240-029-0750	6.10	0.74	19.05	10.62	7.57	22.02	2.61
C0240-029-1000	6.10	0.74	25.40	13.92	9.50	22.02	1.93
C0240-029-1120	6.10	0.74	28.45	15.49	10.41	22.02	1.70
C0240-029-1500	6.10	0.74	38.10	20.52	13.36	22.02	1.26
C0240-029-1750	6.10	0.74	44.45	23.83	15.29	22.02	1.07
C0240-029-2000	6.10	0.74	50.80	27.13	17.22	22.02	0.93

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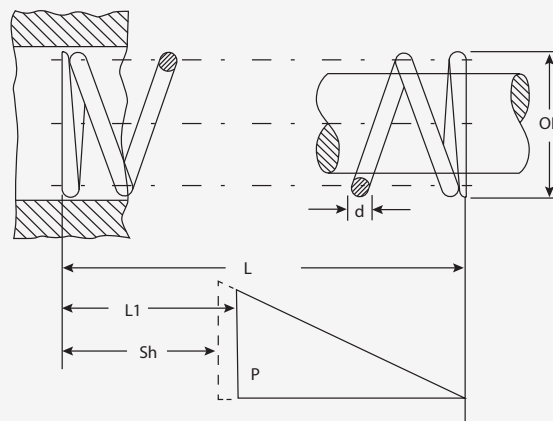
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	mm	mm	mm	mm	mm	N	N/mm
C0240-032-0500	6.1	0.81	12.70	7.95	5.89	30.65	6.44
C0240-032-0750	6.1	0.81	19.05	11.05	8.51	30.65	3.84
C0240-032-1000	6.1	0.81	25.40	14.40	10.95	30.65	2.78
C0240-032-1250	6.1	0.81	31.75	17.75	13.36	30.65	2.19
C0240-032-1500	6.1	0.81	38.10	21.11	15.65	30.65	1.80
C0240-032-2000	6.1	0.81	50.80	27.76	20.24	30.65	1.33
C0240-035-0500	6.1	0.89	12.70	8.33	7.26	37.10	8.49
C0240-035-0750	6.1	0.89	19.05	12.14	9.93	37.10	5.37
C0240-035-1000	6.1	0.89	25.40	15.95	12.60	37.10	3.92
C0240-035-1500	6.1	0.89	38.10	23.57	17.93	37.10	2.56
C0240-035-2000	6.1	0.89	50.80	31.19	23.27	37.10	1.89
C0240-040-0500	6.1	1.02	12.70	9.12	8.53	53.51	14.93
C0240-040-0750	6.1	1.02	19.05	13.34	11.79	53.51	9.36
C0240-040-1000	6.1	1.02	25.40	17.55	15.04	53.51	6.83
C0240-040-1500	6.1	1.02	38.10	25.98	21.56	53.51	4.41
C0240-040-2000	6.1	1.02	50.80	34.42	28.09	53.51	3.27
C0240-045-1000	6.1	1.14	25.40	19.30	16.94	71.93	11.78
C0240-045-1500	6.1	1.14	38.10	28.65	24.36	71.93	7.60
C0300-022-0500	7.62	0.56	12.70	5.21	2.77	8.59	1.16
C0300-022-0750	7.62	0.56	19.05	7.06	3.61	8.59	0.72
C0300-022-1000	7.62	0.56	25.40	10.08	4.45	8.59	0.56
C0300-022-1500	7.62	0.56	38.10	14.76	5.89	8.59	0.37
C0300-022-1750	7.62	0.56	44.45	17.22	6.63	8.59	0.32
C0300-022-2000	7.62	0.56	50.80	18.11	7.34	8.59	0.26
C0300-022-2500	7.62	0.56	63.50	25.78	8.48	8.59	0.23
C0300-026-0500	7.62	0.66	12.70	5.56	3.63	13.88	1.94
C0300-026-0750	7.62	0.66	19.05	8.33	4.62	13.88	1.30
C0300-026-1000	7.62	0.66	25.40	9.93	5.94	13.88	0.89
C0300-026-1500	7.62	0.66	38.10	15.47	7.95	13.88	0.61
C0300-026-2000	7.62	0.66	50.80	20.32	10.01	13.88	0.46
C0300-026-2500	7.62	0.66	63.50	27.56	11.56	13.88	0.39

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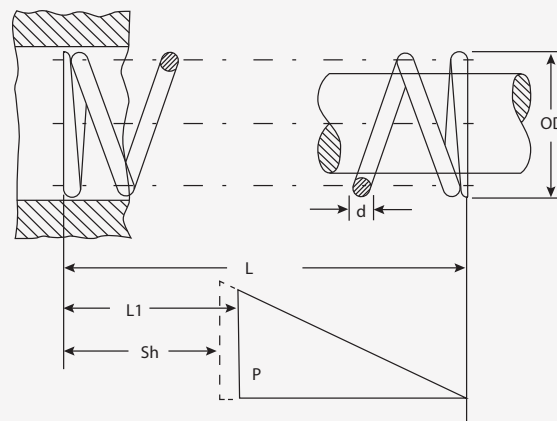
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	mm	mm	mm	mm	mm	N	N/mm
C0300-030-1750	7.62	0.76	44.45	21.26	11.61	19.66	0.84
C0300-032-0500	7.62	0.81	12.70	6.68	4.83	24.87	4.13
C0300-032-0750	7.62	0.81	19.05	9.50	6.48	24.87	2.61
C0300-032-1000	7.62	0.81	25.40	11.94	8.28	24.87	1.86
C0300-032-1500	7.62	0.81	38.10	18.11	11.43	24.87	1.24
C0300-032-2000	7.62	0.81	50.80	24.00	14.55	24.87	0.93
C0300-032-2500	7.62	0.81	63.50	31.32	16.66	24.87	0.77
C0300-035-1000	7.62	0.89	25.40	13.54	9.40	31.85	2.68
C0300-040-0500	7.62	1.02	12.70	8.05	6.99	43.81	9.43
C0300-040-0750	7.62	1.02	19.05	11.66	9.35	43.81	5.92
C0300-040-1000	7.62	1.02	25.40	15.24	11.68	43.81	4.31
C0300-040-1250	7.62	1.02	31.75	18.82	14.05	43.81	3.40
C0300-040-1500	7.62	1.02	38.10	22.40	16.38	43.81	2.80
C0300-040-2000	7.62	1.02	50.80	29.59	21.08	43.81	2.07
C0300-040-2500	7.62	1.02	63.50	36.78	25.78	43.81	1.65
C0300-049-0500	7.62	1.25	12.70	9.27	8.33	79.98	23.28
C0300-049-0750	7.62	1.25	19.05	13.49	11.68	79.98	14.35
C0300-049-1000	7.62	1.25	25.40	17.70	14.73	79.98	10.38
C0300-049-1250	7.62	1.25	31.75	21.89	17.78	79.98	8.12
C0300-049-1500	7.62	1.25	38.10	26.11	20.85	79.98	6.67
C0300-049-2000	7.62	1.25	50.80	34.54	26.95	79.98	4.92
C0300-049-2500	7.62	1.25	63.50	42.98	33.05	79.98	3.90
C0300-049-3000	7.62	1.25	76.20	51.41	39.14	79.98	3.22
C0360-026-0500	9.14	0.66	12.70	5.46	2.97	11.65	1.61
C0360-026-0750	9.14	0.66	19.05	8.20	3.63	11.65	1.07
C0360-026-1000	9.14	0.66	25.40	9.12	4.60	11.65	0.72
C0360-026-1500	9.14	0.66	38.10	14.33	6.15	11.65	0.49
C0360-026-2000	9.14	0.66	50.80	21.18	7.57	11.65	0.37
C0360-032-0500	9.14	0.81	12.70	6.02	4.04	21.00	3.13
C0360-032-0750	9.14	0.81	19.05	9.02	5.05	21.00	2.08
C0360-032-1000	9.14	0.81	25.40	11.35	6.27	21.00	1.49
C0360-032-1500	9.14	0.81	38.10	16.03	8.74	21.00	0.95
C0360-032-2000	9.14	0.81	50.80	20.83	11.02	21.00	0.70
C0360-032-2500	9.14	0.81	63.50	28.27	12.65	21.00	0.60

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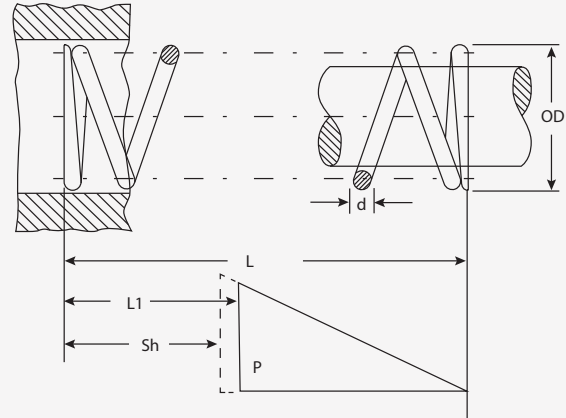
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	mm	mm	mm	mm	mm	N	N/mm
C0360-035-0500	9.14	0.89	12.70	6.73	4.95	25.49	4.27
C0360-035-0750	9.14	0.89	19.05	9.63	6.27	25.49	2.70
C0360-035-1000	9.14	0.89	25.40	12.52	7.62	25.49	1.98
C0360-035-1500	9.14	0.89	38.10	18.29	10.26	25.49	1.28
C0360-035-2000	9.14	0.89	50.80	24.05	12.93	25.49	0.95
C0360-035-2500	9.14	0.89	63.50	29.82	15.60	25.49	0.75
C0360-038-0500	9.14	0.97	12.70	7.01	5.05	33.94	5.97
C0360-038-0750	9.14	0.97	19.05	9.73	6.76	33.94	3.64
C0360-038-1000	9.14	0.97	25.40	12.47	8.43	33.94	2.63
C0360-038-1500	9.14	0.97	38.10	17.91	11.81	33.94	1.68
C0360-038-2000	9.14	0.97	50.80	23.88	14.91	33.94	1.26
C0360-038-2500	9.14	0.97	63.50	29.49	18.06	33.94	0.10
C0360-040-0500	9.14	1.02	12.70	7.34	5.94	37.01	6.90
C0360-040-0750	9.14	1.02	19.05	10.49	7.67	37.01	4.32
C0360-040-1000	9.14	1.02	25.40	13.64	9.40	37.01	3.15
C0360-040-1500	9.14	1.02	38.10	19.96	12.83	37.01	2.05
C0360-040-2000	9.14	1.02	50.80	26.29	16.28	37.01	1.51
C0360-040-2500	9.14	1.02	63.50	32.59	19.74	37.01	1.19
C0360-049-0500	9.14	1.25	12.70	8.71	7.44	64.72	16.19
C0360-049-0750	9.14	1.25	19.05	12.57	9.75	64.72	9.98
C0360-049-1000	9.14	1.25	25.40	16.43	12.04	64.72	7.21
C0360-049-1250	9.14	1.25	31.75	20.29	14.35	64.72	5.65
C0360-049-1500	9.14	1.25	38.10	24.18	16.66	64.72	4.64
C0360-049-2000	9.14	1.25	50.80	31.90	21.26	64.72	3.43
C0360-049-2500	9.14	1.25	63.50	39.65	25.88	64.72	2.71
C0360-049-3500	9.14	1.25	88.90	55.09	35.10	64.72	1.91
C0360-055-1500	9.14	1.40	38.10	25.83	19.74	89.58	7.30
C0360-055-2000	9.14	1.40	50.80	34.11	25.32	89.58	5.37
C0390-047-2000	9.91	1.19	50.80	28.02	18.97	53.82	2.36
C0420-035-0750	10.67	0.89	19.05	8.99	5.36	22.02	2.19
C0420-035-1000	10.67	0.89	25.40	11.63	6.35	22.02	1.59
C0420-035-1500	10.67	0.89	38.10	16.94	8.33	22.02	1.03

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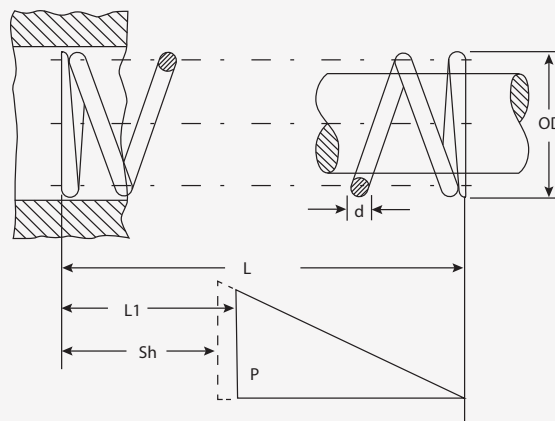
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	mm	mm	mm	mm	mm	N	N/mm
C0420-038-0750	10.67	0.97	19.05	7.49	5.66	29.36	2.54
C0420-038-1000	10.67	0.97	25.40	10.16	6.83	29.36	1.93
C0420-038-1500	10.67	0.97	38.10	14.73	9.45	29.36	1.26
C0420-038-2000	10.67	0.97	50.80	23.29	11.58	29.36	1.07
C0420-038-2500	10.67	0.97	63.50	28.85	13.51	29.36	0.84
C0420-042-0750	10.67	1.07	19.05	8.76	6.30	39.59	3.85
C0420-042-1000	10.67	1.07	25.40	11.30	7.87	39.59	2.80
C0420-042-1500	10.67	1.07	38.10	16.51	10.90	39.59	1.84
C0420-042-2000	10.67	1.07	50.80	22.89	14.17	39.59	1.42
C0420-042-2500	10.67	1.07	63.50	30.71	16.00	39.59	1.21
C0420-048-1000	10.67	1.22	25.40	14.17	10.34	53.25	4.74
C0420-048-1500	10.67	1.22	38.10	20.65	14.02	53.25	3.05
C0420-048-2000	10.67	1.22	50.80	27.13	17.73	53.25	2.26
C0420-055-1000	10.67	1.40	25.40	15.24	11.53	80.07	7.88
C0420-055-1500	10.67	1.40	38.10	22.35	16.38	80.07	5.08
C0420-055-2000	10.67	1.40	50.80	29.34	21.97	80.07	3.73
C0420-055-2500	10.67	1.40	63.50	36.32	26.67	80.07	2.94
C0420-063-0500	10.67	1.60	12.70	9.17	8.76	112.85	31.87
C0420-063-0750	10.67	1.60	19.05	13.16	12.09	112.85	19.11
C0420-063-1000	10.67	1.60	25.40	17.15	15.01	112.85	13.63
C0420-063-1500	10.67	1.60	38.10	25.10	20.85	112.85	8.68
C0420-063-2000	10.67	1.60	50.80	33.07	26.72	112.85	6.35
C0420-063-2250	10.67	1.60	57.15	37.06	29.64	112.85	5.62
C0420-063-2500	10.67	1.60	63.50	41.05	32.56	112.85	5.02
C0455-039-1500	11.56	0.99	38.10	17.32	8.99	27.62	1.33
C0480-035-1000	12.19	0.89	25.40	8.94	5.66	20.86	1.26
C0480-035-1500	12.19	0.89	38.10	12.78	7.29	20.86	0.82
C0480-035-2000	12.19	0.89	50.80	16.64	8.92	20.86	0.61
C0480-035-2500	12.19	0.89	63.50	20.96	10.52	20.86	0.49
C0480-035-3000	12.19	0.89	76.20	24.33	12.14	20.86	0.40
C0480-038-0500	12.19	0.97	12.70	5.08	3.66	26.69	3.50
C0480-038-1000	12.19	0.97	25.40	9.40	5.59	26.69	1.66
C0480-038-1500	12.19	0.97	38.10	12.70	7.75	26.69	1.05
C0480-038-2000	12.19	0.97	50.80	19.20	9.86	26.69	0.84
C0480-038-2500	12.19	0.97	63.50	27.05	10.90	26.69	0.74
C0480-038-3000	12.19	0.97	76.20	32.26	12.55	26.69	0.61

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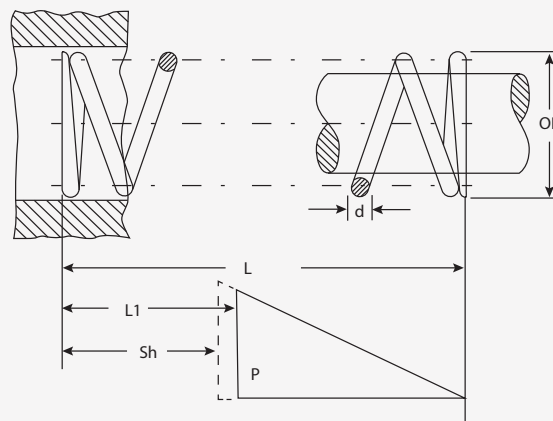
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	mm	mm	mm	mm	mm	N	N/mm
C0480-042-0500	12.19	1.07	12.70	5.59	4.24	34.70	4.90
C0480-042-1000	12.19	1.07	25.40	10.16	6.68	34.70	2.28
C0480-042-1500	12.19	1.07	38.10	14.73	9.09	34.70	1.49
C0480-042-2000	12.19	1.07	50.80	21.23	11.73	34.70	1.17
C0480-042-2500	12.19	1.07	63.50	28.58	13.21	34.70	1.00
C0480-042-3000	12.19	1.07	76.20	34.04	15.29	34.70	0.82
C0480-051-0500	12.19	1.30	12.70	7.52	6.48	55.65	10.73
C0480-051-1000	12.19	1.30	25.40	13.72	9.75	55.65	4.76
C0480-051-1500	12.19	1.30	38.10	19.91	13.03	55.65	3.06
C0480-051-2000	12.19	1.30	50.80	26.09	16.28	55.65	2.26
C0480-051-2500	12.19	1.30	63.50	32.28	19.56	55.65	1.79
C0480-051-3000	12.19	1.30	76.20	38.48	22.83	55.65	1.47
C0480-055-0500	12.19	1.40	12.70	6.99	6.25	72.06	12.60
C0480-055-1000	12.19	1.40	25.40	13.59	9.93	72.06	6.13
C0480-055-1500	12.19	1.40	38.10	19.43	14.15	72.06	3.85
C0480-055-2000	12.19	1.40	50.80	26.31	18.42	72.06	2.94
C0480-055-2500	12.19	1.40	63.50	32.56	22.20	72.06	2.33
C0480-055-3000	12.19	1.40	76.20	40.56	24.92	72.06	2.01
C0480-063-0500	12.19	1.60	12.70	7.82	7.52	102.31	21.00
C0480-063-0750	12.19	1.60	19.05	11.56	9.86	102.31	13.65
C0480-063-1000	12.19	1.60	25.40	15.11	12.32	102.31	9.98
C0480-063-1500	12.19	1.60	38.10	22.73	16.89	102.31	6.65
C0480-063-2000	12.19	1.60	50.80	29.87	22.73	102.31	4.88
C0480-063-2250	12.19	1.60	57.15	33.40	25.12	102.31	4.31
C0480-063-2500	12.19	1.60	63.50	36.96	27.51	102.31	3.85
C0480-063-2750	12.19	1.60	69.85	40.56	29.90	102.31	3.48
C0480-063-3000	12.19	1.60	76.20	44.12	32.28	102.31	3.19
C0480-072-2000	12.19	1.83	50.80	33.99	26.70	144.48	8.58
C0600-049-1000	15.24	1.25	25.40	12.22	7.54	37.37	2.84
C0600-049-1500	15.24	1.25	38.10	17.60	9.65	37.37	1.82
C0600-049-2000	15.24	1.25	50.80	23.01	11.76	37.37	1.35
C0600-049-2500	15.24	1.25	63.50	28.40	13.87	37.37	1.07
C0600-049-3000	15.24	1.25	76.20	33.78	15.98	37.37	0.88

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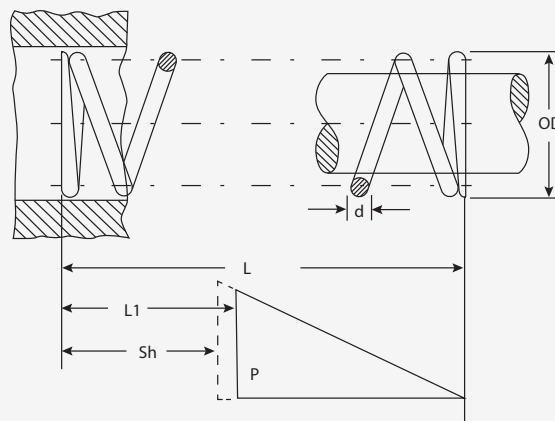
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	mm	mm	mm	mm	mm	N	N/mm
C0600-055-1000	15.24	1.40	25.40	12.70	7.72	53.38	4.20
C0600-055-1500	15.24	1.40	38.10	17.78	10.67	53.38	2.63
C0600-055-2000	15.24	1.40	50.80	23.83	14.27	53.38	1.98
C0600-055-2500	15.24	1.40	63.50	29.26	16.94	53.38	1.56
C0600-055-3000	15.24	1.40	76.20	36.17	19.10	53.38	1.33
C0600-063-1000	15.24	1.60	25.40	13.34	9.60	80.07	6.65
C0600-063-1500	15.24	1.60	38.10	19.05	13.36	80.07	4.20
C0600-063-2000	15.24	1.60	50.80	25.40	17.78	80.07	3.15
C0600-063-2500	15.24	1.60	63.50	31.29	21.23	80.07	2.49
C0600-063-3000	15.24	1.60	76.20	39.57	23.55	80.07	2.19
C0600-072-1000	15.24	1.83	25.40	14.35	12.75	106.76	9.63
C0600-072-1500	15.24	1.83	38.10	21.08	17.55	106.76	6.30
C0600-072-2000	15.24	1.83	50.80	28.96	21.54	106.76	4.90
C0600-072-2500	15.24	1.83	63.50	37.11	26.24	106.76	4.04
C0600-072-3000	15.24	1.83	76.20	44.25	30.63	106.76	3.34
C0600-081-2500	15.24	2.06	63.50	43.56	28.04	145.41	7.30
C0600-085-3000	15.24	2.16	76.20	53.31	34.90	167.34	7.30
C0720-055-1000	18.29	1.40	25.40	11.68	6.30	43.37	3.24
C0720-055-1500	18.29	1.40	38.10	16.00	8.46	43.37	2.01
C0720-055-2000	18.29	1.40	50.80	20.83	10.44	43.37	1.48
C0720-055-2500	18.29	1.40	63.50	27.81	13.18	43.37	1.20
C0720-055-3000	18.29	1.40	76.20	33.07	15.06	43.37	0.99
C0720-063-1000	18.29	1.60	25.40	10.67	8.74	62.28	4.20
C0720-063-1500	18.29	1.60	38.10	14.48	12.07	62.28	2.63
C0720-063-2000	18.29	1.60	50.80	18.54	15.29	62.28	1.93
C0720-063-2500	18.29	1.60	63.50	30.58	16.61	62.28	1.89
C0720-063-3000	18.29	1.60	76.20	36.25	19.08	62.28	1.56
C0720-072-1000	18.29	1.83	25.40	12.70	10.08	93.41	7.35
C0720-072-1500	18.29	1.83	38.10	17.78	14.07	93.41	4.55
C0720-072-2000	18.29	1.83	50.80	24.13	17.20	93.41	3.50
C0720-072-2500	18.29	1.83	63.50	32.39	20.70	93.41	2.99
C0720-072-3000	18.29	1.83	76.20	38.38	23.93	93.41	2.47
C0720-072-3500	18.29	1.83	88.90	44.42	27.15	93.41	2.10
C0720-072-4000	18.29	1.83	101.60	51.18	30.02	93.41	1.86

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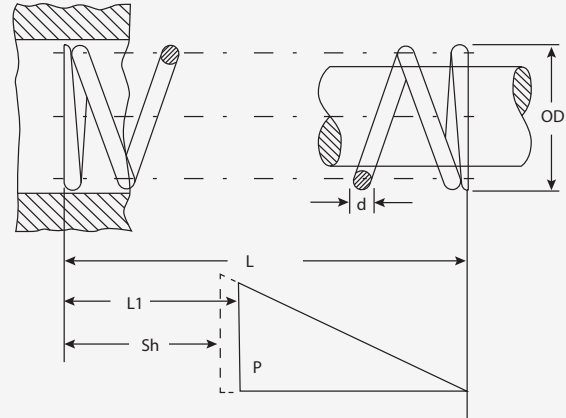
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	mm	mm	mm	mm	mm	N	N/mm
C0720-081-1000	18.29	2.06	25.40	15.34	12.90	127.75	12.71
C0720-081-1500	18.29	2.06	38.10	22.05	16.89	127.75	7.96
C0720-081-2000	18.29	2.06	50.80	28.75	20.90	127.75	5.79
C0720-081-2500	18.29	2.06	63.50	35.46	24.92	127.75	4.55
C0720-081-3000	18.29	2.06	76.20	42.16	28.93	127.75	3.75
C0720-081-3500	18.29	2.06	88.90	48.87	32.94	127.75	3.19
C0720-081-4000	18.29	2.06	101.60	55.52	36.96	127.75	2.78
C0720-085-3500	18.29	2.16	88.90	53.64	32.61	149.42	4.24
C0720-112-3000	18.29	2.85	76.20	56.29	40.77	309.55	15.54
C0720-112-3500	18.29	2.85	88.90	65.41	46.58	309.55	13.18
C0850-068-4000	21.59	1.73	101.60	52.83	23.80	48.66	1.00
C0850-074-1000	21.59	1.88	25.40	15.11	9.75	61.65	5.99
C0850-074-2000	21.59	1.88	50.80	28.45	15.70	61.65	2.77
C0850-074-3000	21.59	1.88	76.20	41.78	21.64	61.65	1.79
C0850-081-1500	21.59	2.06	38.10	22.86	14.55	79.31	5.20
C0850-081-2000	21.59	2.06	50.80	29.87	18.08	79.31	3.78
C0850-081-2500	21.59	2.06	63.50	36.88	21.59	79.31	2.98
C0850-081-3000	21.59	2.06	76.20	43.89	25.12	79.31	2.45
C0850-092-1500	21.59	2.34	38.10	24.56	17.42	112.94	8.35
C0850-092-2000	21.59	2.34	50.80	32.13	21.84	112.94	6.04
C0850-092-2500	21.59	2.34	63.50	39.67	26.24	112.94	4.74
C0850-092-3000	21.59	2.34	76.20	47.24	30.66	112.94	3.90
C0850-098-1500	21.59	2.49	38.10	25.48	18.97	134.51	10.64
C0850-098-2000	21.59	2.49	50.80	33.32	23.88	134.51	7.70
C0850-098-2500	21.59	2.49	63.50	41.20	28.75	134.51	6.02
C0850-098-3000	21.59	2.49	76.20	49.05	33.66	134.51	4.95
C0850-098-3500	21.59	2.49	88.90	56.90	38.53	134.51	4.20
C0975-092-1000	24.77	2.34	25.40	16.10	11.58	99.24	10.68
C0975-092-1250	24.77	2.34	31.75	19.61	13.34	99.24	8.17
C0975-092-1500	24.77	2.34	38.10	23.11	15.09	99.24	6.62
C0975-092-2000	24.77	2.34	50.80	30.12	18.59	99.24	4.80
C0975-092-3000	24.77	2.34	76.20	44.12	25.63	99.24	3.10
C0975-092-3500	24.77	2.34	88.90	51.13	29.13	99.24	2.63
C0975-092-4000	24.77	2.34	101.60	58.14	32.66	99.24	2.28

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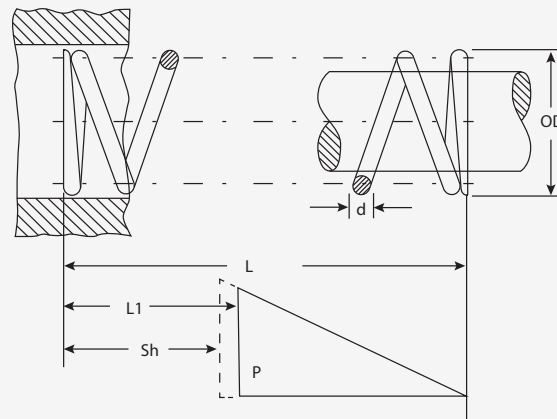
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	mm	mm	mm	mm	mm	N	N/mm
C0975-096-1000	24.77	2.44	25.40	16.48	12.22	111.69	12.51
C0975-096-1250	24.77	2.44	31.75	20.07	14.12	111.69	9.56
C0975-096-1500	24.77	2.44	38.10	23.65	16.03	111.69	7.74
C0975-096-2000	24.77	2.44	50.80	30.84	19.81	111.69	5.58
C0975-096-2500	24.77	2.44	63.50	38.02	23.62	111.69	4.38
C0975-096-3000	24.77	2.44	76.20	45.19	27.41	111.69	3.61
C0975-096-3500	24.77	2.44	88.90	52.37	31.19	111.69	3.06
C0975-105-1000	24.77	2.67	25.40	17.30	13.67	143.19	17.68
C0975-105-1500	24.77	2.67	38.10	24.87	18.11	143.19	10.82
C0975-105-2000	24.77	2.67	50.80	32.46	22.56	143.19	7.81
C0975-105-2500	24.77	2.67	63.50	40.03	26.97	143.19	6.09
C0975-105-3000	24.77	2.67	76.20	47.60	31.42	143.19	5.01
C0975-105-3500	24.77	2.67	88.90	55.19	35.84	143.19	4.25
C0975-105-4000	24.77	2.67	101.60	62.76	40.28	143.19	3.69
C0975-112-1500	24.77	2.85	38.10	25.81	19.71	171.17	13.91
C0975-112-2000	24.77	2.85	50.80	33.71	24.64	171.17	9.99
C0975-112-2500	24.77	2.85	63.50	41.58	29.57	171.17	7.81
C0975-112-3000	24.77	2.85	76.20	49.45	34.49	171.17	6.41
C0975-112-3500	24.77	2.85	88.90	57.35	39.45	171.17	5.43
C0975-125-1250	24.77	3.18	31.75	23.24	19.61	231.49	27.20
C0975-125-1500	24.77	3.18	38.10	27.46	22.53	231.49	21.75
C0975-125-2000	24.77	3.18	50.80	35.92	28.37	231.49	15.54
C0975-125-2500	24.77	3.18	63.50	44.35	34.21	231.49	12.09
C0975-125-3000	24.77	3.18	76.20	52.81	40.06	231.49	9.89
C0975-125-3500	24.77	3.18	88.90	61.24	45.90	231.49	8.37
C0975-125-4000	24.77	3.18	101.60	69.70	51.74	231.49	7.25
C0975-135-4000	24.77	3.43	101.60	73.53	55.96	286.73	10.20
C1225-096-1500	31.12	2.44	38.10	21.62	12.75	89.85	5.44
C1225-096-2000	31.12	2.44	50.80	28.02	15.29	89.85	3.94
C1225-096-2500	31.12	2.44	63.50	34.42	17.83	89.85	3.08
C1225-096-3000	31.12	2.44	76.20	40.82	20.37	89.85	2.54
C1225-096-3500	31.12	2.44	88.90	47.22	22.91	89.85	2.15
C1225-096-4000	31.12	2.44	101.60	53.62	25.45	89.85	1.87
C1225-096-4500	31.12	2.44	114.30	60.02	27.99	89.85	1.66
C1225-096-5000	31.12	2.44	127.00	66.42	30.53	89.85	1.49

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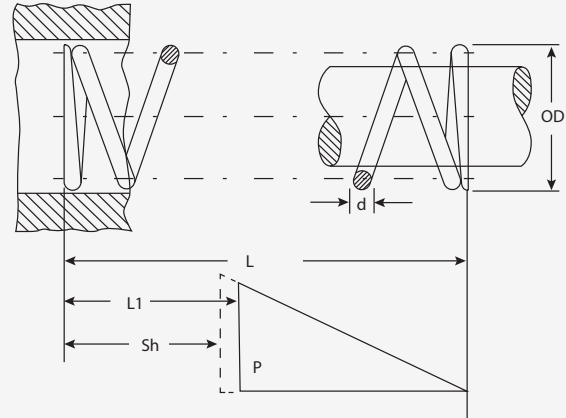
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A complete spring catalogue is available upon request



Product Code	Outside Dia (OD)	Wire Dia (d)	Free Length (L), Approx.	Load Length (L1)	Solid Height (Sh) Approx.	Load (P) at L1	Spring Rate (R)
	mm	mm	mm	mm	mm	N	N/mm
C1225-112-1000	31.12	2.85	25.40	16.46	12.40	138.03	15.44
C1225-112-1500	31.12	2.85	38.10	23.39	15.82	138.03	9.38
C1225-112-2000	31.12	2.85	50.80	30.35	19.23	138.03	6.74
C1225-112-2500	31.12	2.85	63.50	37.29	22.63	138.03	5.27
C1225-112-3000	31.12	2.85	76.20	44.22	26.06	138.03	4.31
C1225-112-3500	31.12	2.85	88.90	51.16	29.46	138.03	3.66
C1225-112-4000	31.12	2.85	101.60	58.12	32.87	138.03	3.17
C1225-125-1250	31.12	3.18	31.75	21.16	16.23	187.14	17.64
C1225-125-1500	31.12	3.18	38.10	24.84	18.31	187.14	14.11
C1225-125-2000	31.12	3.18	50.80	32.26	22.48	187.14	10.08
C1225-125-2500	31.12	3.18	63.50	39.65	26.62	187.14	7.84
C1225-125-3000	31.12	3.18	76.20	47.04	30.78	187.14	6.42
C1225-125-4000	31.12	3.18	101.60	61.85	39.09	187.14	4.71
C1225-125-5000	31.12	3.18	127.00	76.66	47.37	187.14	3.71
C1225-135-1500	31.12	3.43	38.10	25.93	20.19	231.44	19.02
C1225-135-2000	31.12	3.43	50.80	33.71	24.94	231.44	13.53
C1225-135-3000	31.12	3.43	76.20	49.23	34.39	231.44	8.58
C1225-135-3500	31.12	3.43	88.90	56.97	39.12	231.44	7.25
C1225-148-1500	31.12	3.76	38.10	27.31	22.56	298.03	27.58
C1225-148-2000	31.12	3.76	50.80	35.51	28.04	298.03	19.50
C1225-148-3000	31.12	3.76	76.20	51.94	38.96	298.03	12.29
C1225-148-3500	31.12	3.76	88.90	60.17	44.42	298.03	10.36
C1225-148-4000	31.12	3.76	101.6	68.38	49.91	298.03	8.96
C1225-148-4500	31.12	3.76	114.3	76.61	55.37	298.03	7.89
C1225-148-5000	31.12	3.76	127.0	84.81	60.83	298.03	7.05

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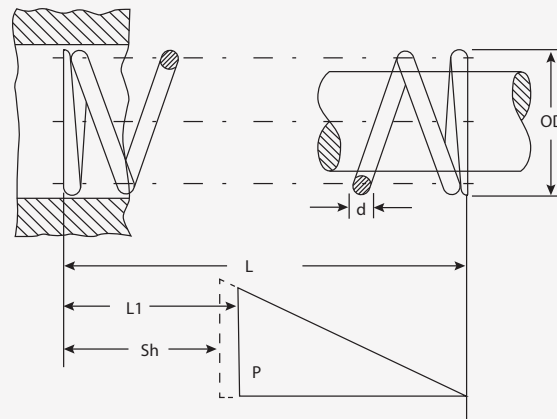
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	mm	mm	mm	mm	mm	N	N/mm
C1460-112-2000	37.08	2.85	50.80	28.32	15.98	116.68	5.18
C1460-112-3000	37.08	2.85	76.20	41.07	20.96	116.68	3.33
C1460-125-1500	37.08	3.18	38.10	23.19	15.65	158.40	10.62
C1460-125-2000	37.08	3.18	50.80	29.95	18.75	158.40	7.60
C1460-125-3000	37.08	3.18	76.20	43.41	24.92	158.40	4.83
C1460-125-4000	37.08	3.18	101.60	56.90	31.09	158.40	3.54
C1460-135-2000	37.08	3.43	50.80	31.19	20.90	196.12	9.99
C1460-135-3000	37.08	3.43	76.20	45.26	28.02	196.12	6.34
C1460-135-4000	37.08	3.43	101.60	59.33	35.38	196.12	4.64
C1460-148-2000	37.08	3.76	50.80	32.82	23.70	252.93	14.05
C1460-148-3000	37.08	3.76	76.20	47.68	32.08	252.93	8.86
C1460-148-4000	37.08	3.76	101.60	62.53	40.46	252.93	6.48
C1460-162-2000	37.08	4.12	50.80	34.54	26.64	324.45	19.95
C1460-162-3000	37.08	4.12	76.20	50.24	36.40	324.45	12.50
C1460-162-4000	37.08	4.12	101.60	65.94	46.15	324.45	9.10
C1460-162-5000	37.08	4.12	127.00	81.64	55.91	324.45	7.14
C1687-135-2000	42.85	3.43	50.80	29.49	18.14	170.81	8.02
C1687-135-3000	42.85	3.43	76.20	42.57	23.67	170.81	5.08
C1687-135-4000	42.85	3.43	101.60	55.65	29.21	170.81	3.71
C1687-135-5000	42.85	3.43	127.00	68.73	34.75	170.81	2.92
C1687-148-2000	42.85	3.76	50.80	30.94	20.62	220.50	11.10
C1687-148-3000	42.85	3.76	76.20	44.65	27.20	220.50	6.98
C1687-148-4000	42.85	3.76	101.60	58.39	33.81	220.50	5.09
C1687-148-5000	42.85	3.76	127.00	72.14	40.39	220.50	4.01
C1687-162-2000	42.85	4.12	50.80	32.49	23.32	283.13	15.44
C1687-162-3000	42.85	4.12	76.20	46.94	31.06	283.13	9.68
C1687-162-4000	42.85	4.12	101.60	61.42	38.84	283.13	7.04
C1687-162-5000	42.85	4.12	127.00	75.87	46.61	283.13	5.53
C1687-177-2000	42.85	4.50	50.80	34.11	26.14	361.46	21.65
C1687-177-3000	42.85	4.50	76.20	49.38	35.18	361.46	13.46
C1687-177-4000	42.85	4.50	101.60	64.64	44.22	361.46	9.77
C1687-177-5000	42.85	4.50	127.00	79.91	53.29	361.46	7.67

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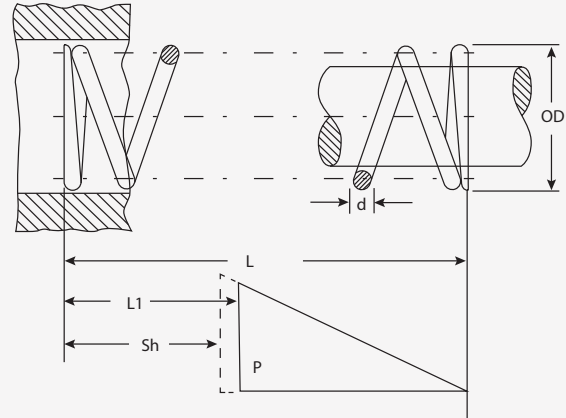
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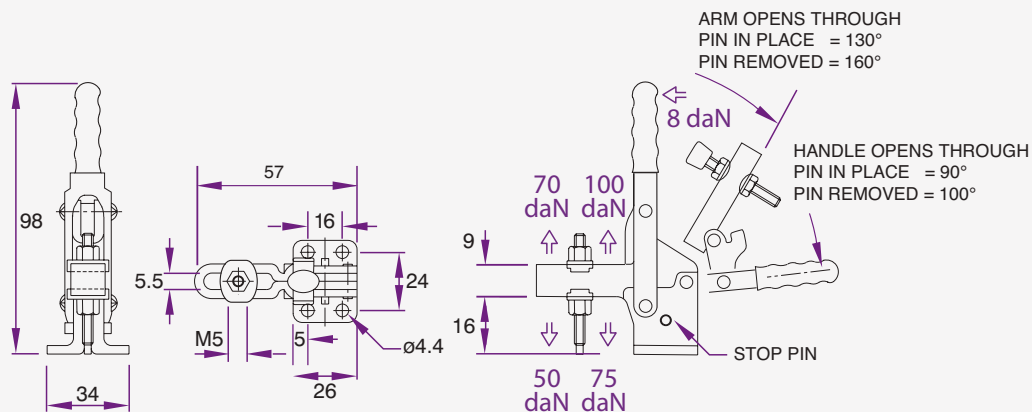
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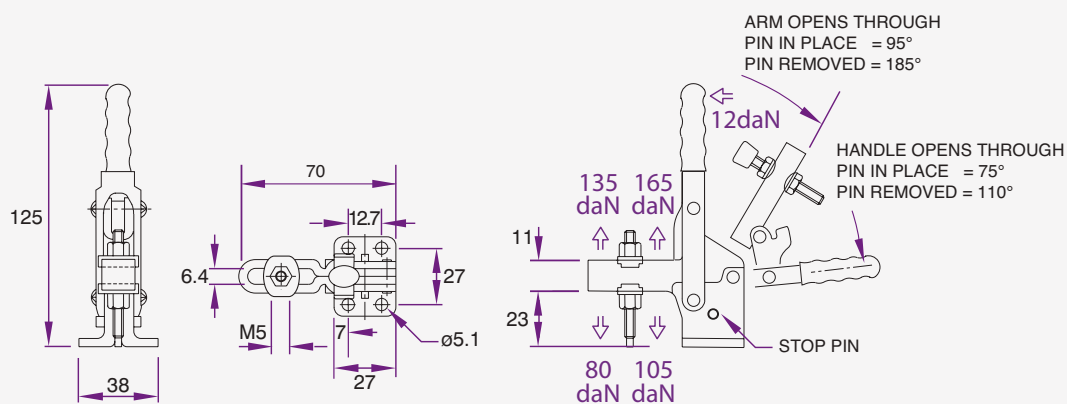


Product Code	Outside Dia (OD)	Wire Dia (d)	Free Length (L), Approx.	Load Length (L1)	Solid Height (Sh) Approx.	Load (P) at L1	Spring Rate (R)
	mm	mm	mm	mm	mm	N	N/mm
C1687-192-2000	42.85	4.88	50.80	35.69	28.88	451.94	29.91
C1687-192-3000	42.85	4.88	76.20	51.74	39.19	451.94	18.48
C1687-192-4000	42.85	4.88	101.60	67.79	49.53	451.94	13.37
C1687-192-5000	42.85	4.88	127.00	83.87	59.84	451.94	10.47
C1937-148-3000	49.2	3.76	76.20	42.27	23.34	193.14	5.69
C1937-148-4000	49.2	3.76	101.60	55.12	28.50	193.14	4.15
C1937-148-5000	49.2	3.76	127.00	67.95	33.63	193.14	3.27
C1937-162-2000	49.2	4.12	50.80	30.78	20.57	248.21	12.39
C1937-162-3000	49.2	4.12	76.20	44.25	26.72	248.21	7.75
C1937-162-4000	49.2	4.12	101.60	57.71	32.84	248.21	5.65
C1937-162-5000	49.2	4.12	127.00	71.15	38.99	248.21	4.45
C1937-177-4000	49.2	4.50	101.60	60.53	37.62	317.11	7.72
C1937-177-5000	49.2	4.50	127.00	74.68	44.86	317.11	6.06
C1937-177-6000	49.2	4.50	152.40	88.82	52.10	317.11	4.99
C1937-207-4500	49.2	5.26	114.30	73.99	51.92	488.10	12.09
C1937-207-5000	49.2	5.26	127.00	81.76	56.64	488.10	10.78
C1937-207-5500	49.2	5.26	139.70	89.51	61.39	488.10	9.71
C1937-207-6000	49.2	5.26	152.40	97.28	66.14	488.10	8.86

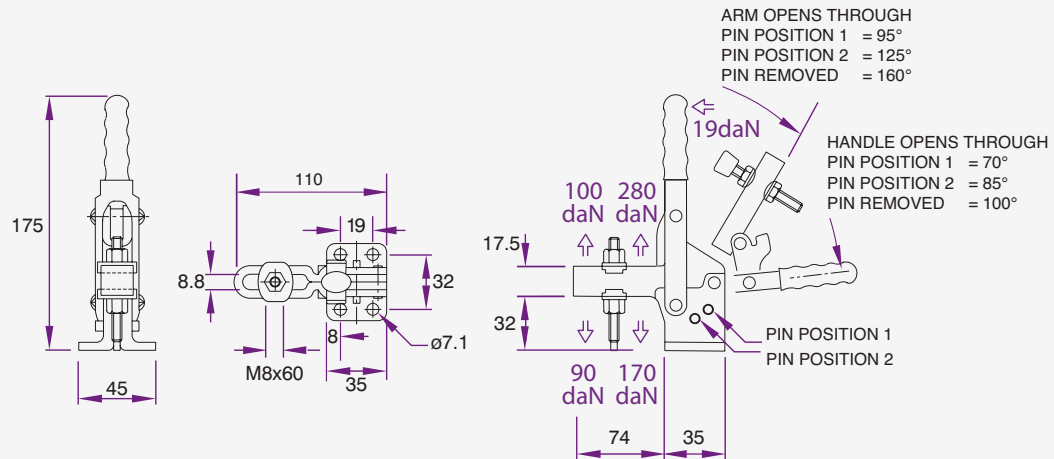
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Product Code	Holding Force	Weight	Pin Opening Angle - Arm		Pin Opening Angle - Handle	
			Pin in Place	Pin Removed	Pin in Place	Pin Removed
V75/2B	75 daN	0.05kg	130°	160°	90°	100°



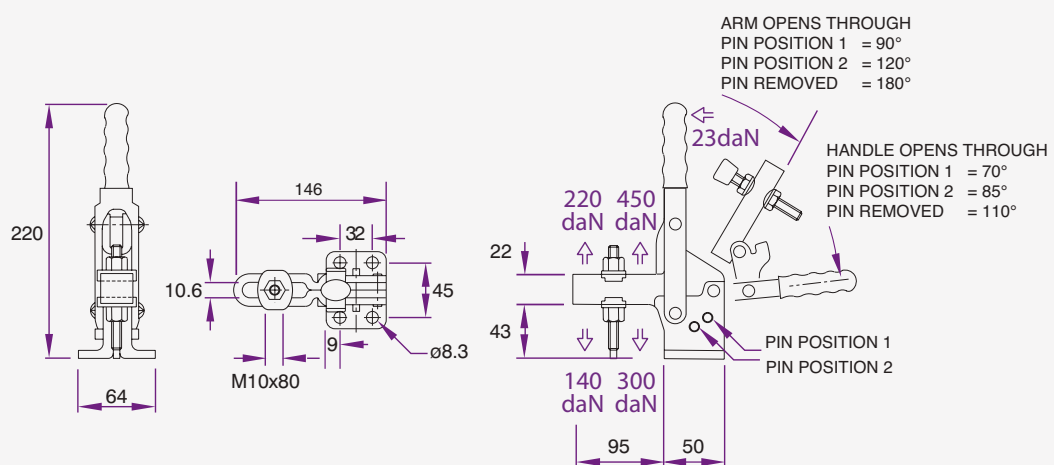
Product Code	Holding Force	Weight	Pin Opening Angle - Arm		Pin Opening Angle - Handle	
			Pin in Place	Pin Removed	Pin in Place	Pin Removed
V150/2B	150 daN	0.15kg	95°	185°	75°	110°



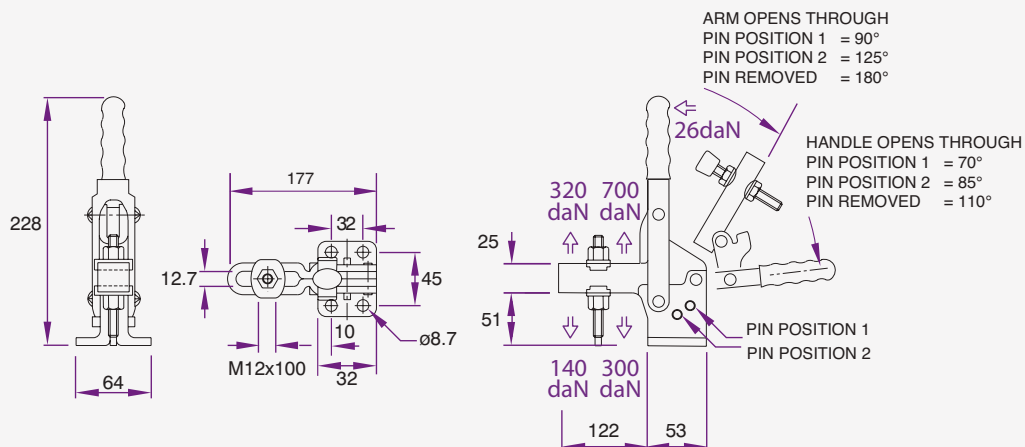
Product Code	Holding Force	Weight	Pin Opening Angle - Arm			Pin Opening Angle - Handle		
			Position 1	Position 2	Removed	Position 1	Position 2	Removed
V250/2B	250 daN	0.38kg	95°	125°	160°	70°	85°	100°

Vertical Toggle Clamps - V350

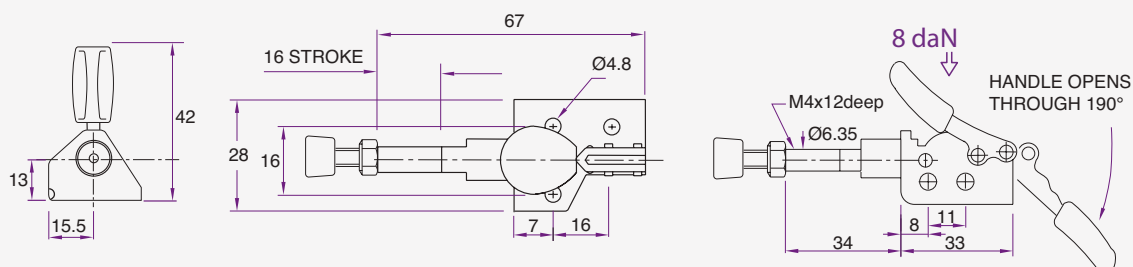
CLAMPING & LIFTING



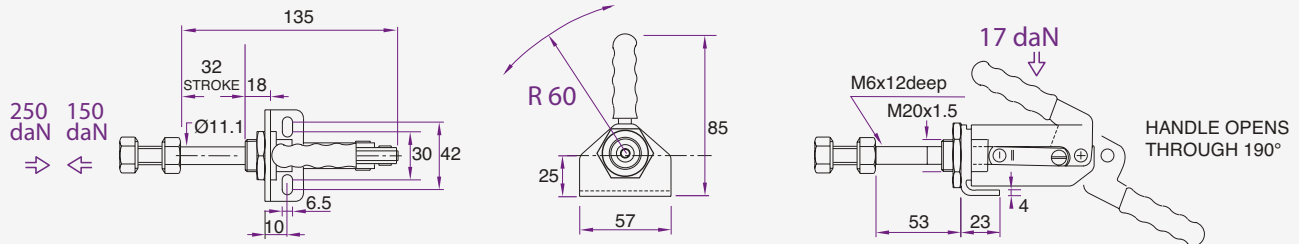
Product Code	Holding Force	Weight	Pin Opening Angle - Arm			Pin Opening Angle - Handle		
			Position 1	Position 2	Removed	Position 1	Position 2	Removed
V350/2B	350 daN	0.80kg	90°	120°	180°	70°	80°	110°



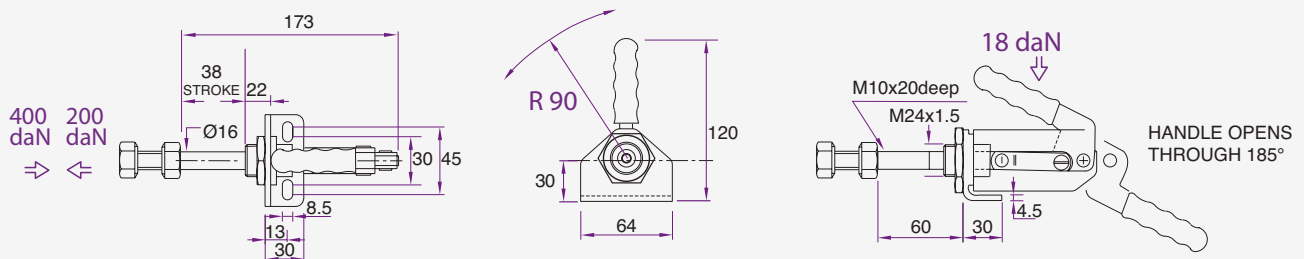
Product Code	Holding Force	Weight	Pin Opening Angle - Arm			Pin Opening Angle - Handle		
			Position 1	Position 2	Removed	Position 1	Position 2	Removed
V450/2B	450 daN	1.35KG	90°	125°	180°	70°	85°	110°



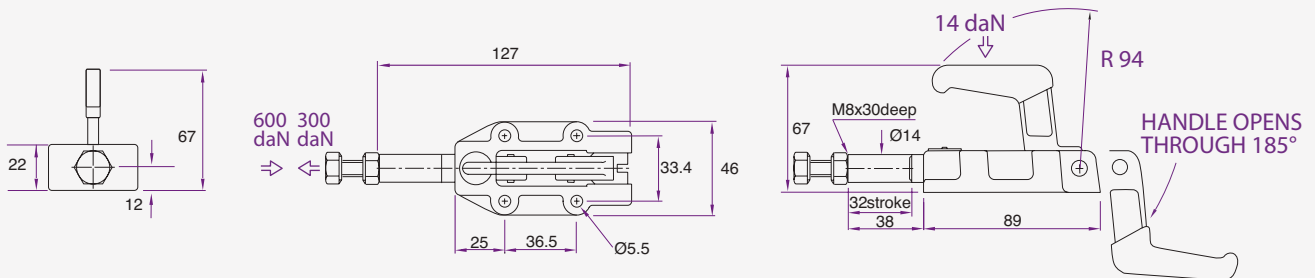
Product Code	Holding Force	Weight	Handle Opening Angle
P50	50 daN	0.05KG	190°



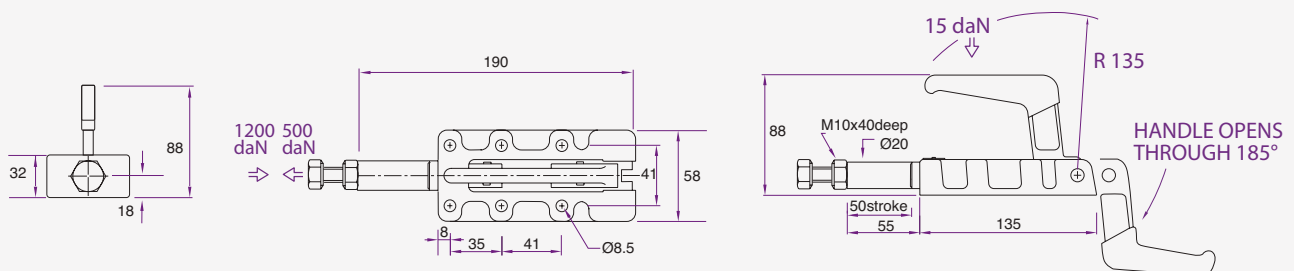
Product Code	Holding Force	Weight	Handle Opening Angle
P250	250 daN	0.30KG	190°



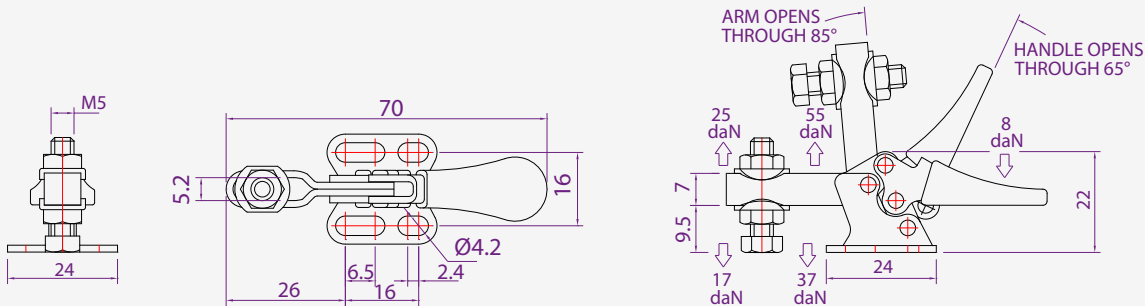
Product Code	Holding Force	Weight	Handle Opening Angle
P450	450 daN	0.75KG	185°



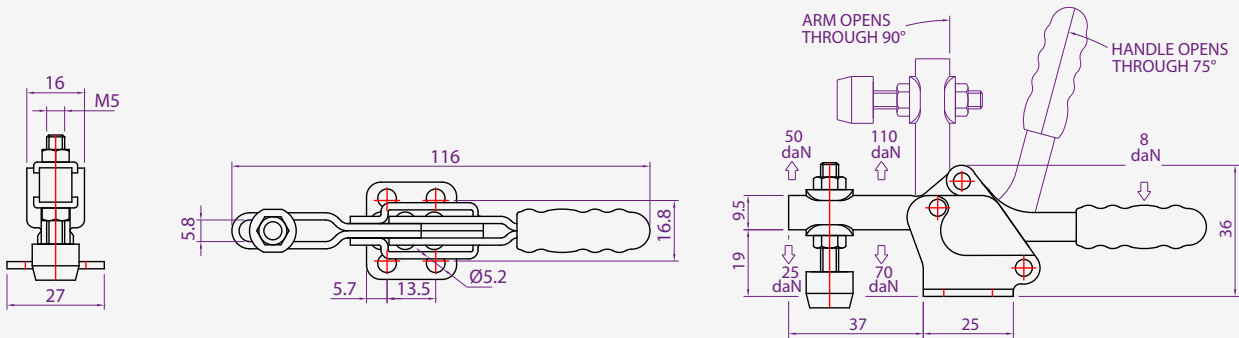
Product Code	Holding Force	Weight	Handle Opening Angle
P600	600 daN	0.45KG	185°



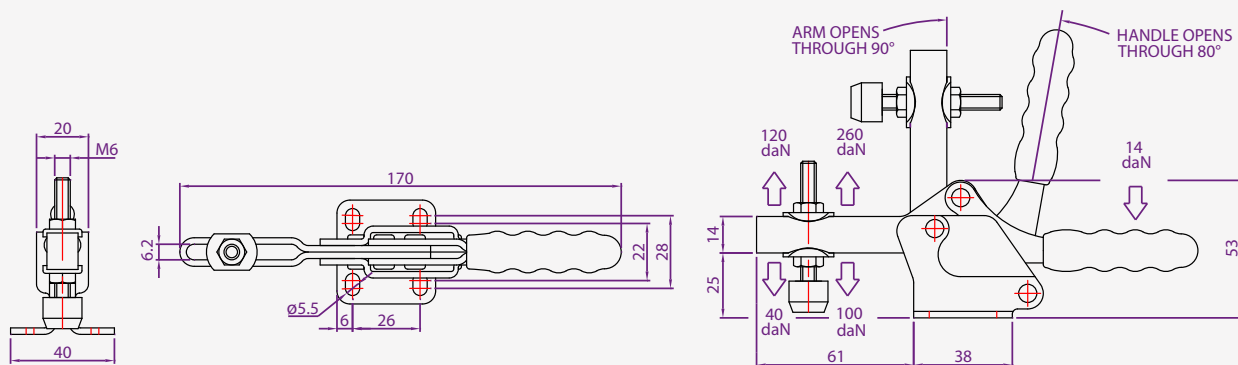
Product Code	Holding Force	Weight	Handle Opening Angle
P1200	1200 daN	1.35KG	185°



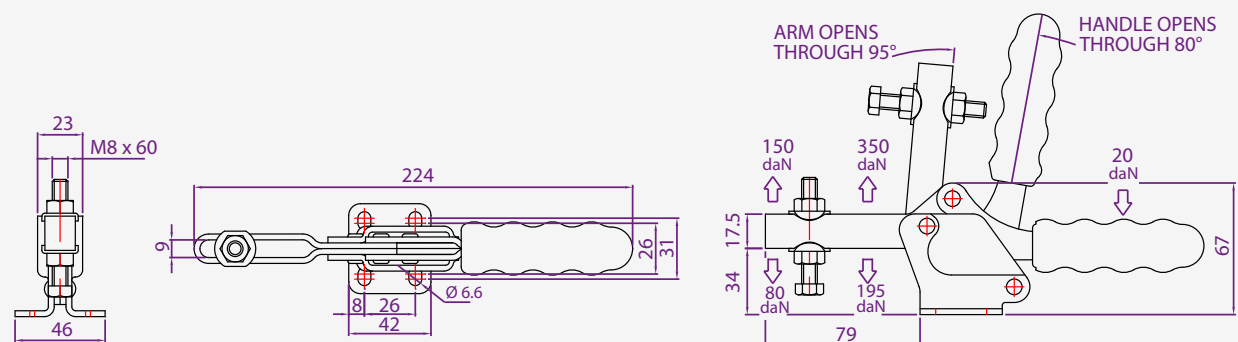
Product Code	Holding Force	Weight	Arm Opening Angle	Handle Opening Angle
H50/2B	50 daN	0.036KG	85°	65°



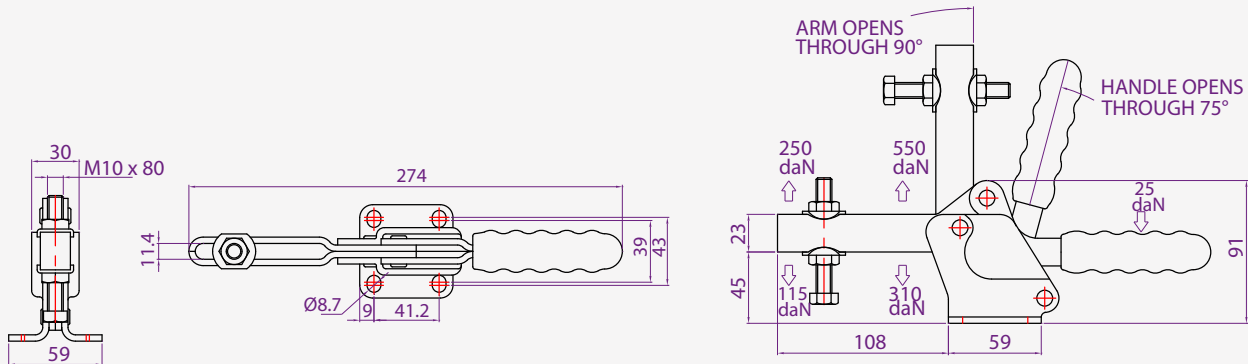
Product Code	Holding Force	Weight	Arm Opening Angle	Handle Opening Angle
H75/2B	75 daN	0.10KG	90°	75°



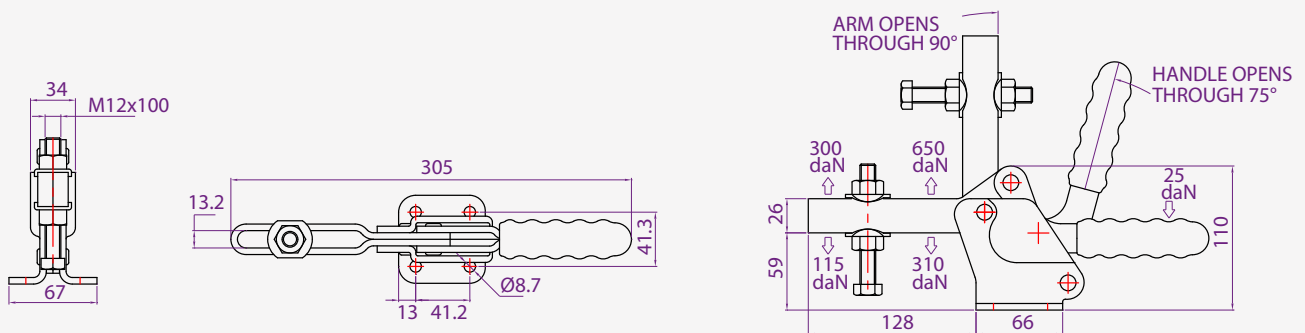
Product Code	Holding Force	Weight	Arm Opening Angle	Handle Opening Angle
H150/2B	150 daN	0.25KG	90°	80°



Product Code	Holding Force	Weight	Arm Opening Angle	Handle Opening Angle
H250/2B	250 daN	0.50KG	95°	80°



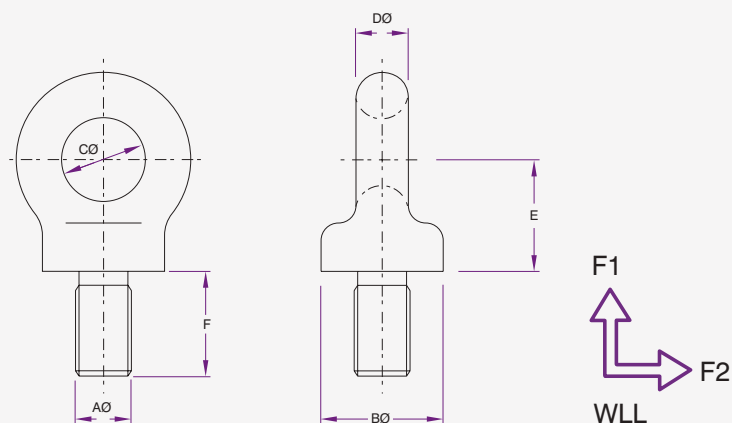
Product Code	Holding Force	Weight	Arm Opening Angle	Handle Opening Angle
H350/2B	350 daN	0.90KG	90°	75°



Product Code	Holding Force	Weight	Arm Opening Angle	Handle Opening Angle
H450/2B	450 daN	1.60KG	90°	75°



Manufactured using only heat certified Australian Steel



WLL (WORKING LOAD LIMIT)

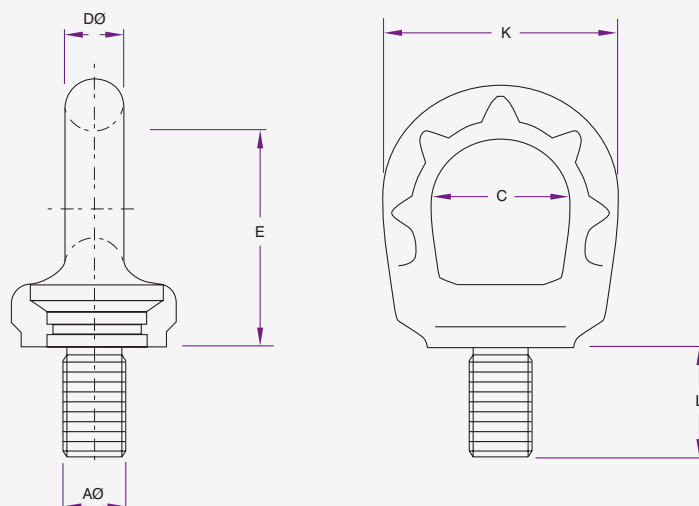
- Each eyebolt is clearly stamped with the permitted F2 WLL.
- F2 WLL - indicates safe use for non-axial lifts.
- F1 WLL - indicates loads which are in line with the axis of the threaded end of the eyebolt. F1 WLL allows up to four (4) times higher lifting capacity whilst maintaining a 6:1 design factor of safety

Metric									
Product Code	AØ	WLL F1	WLL F2	BØ	CØ	DØ	E	F	NET WEIGHT (KG)
EYE10	M10	0.25t	0.06t	21	14	9	19	17	0.06
EYE12	M12	0.4t	0.1t	28	18	11	24	21	0.15
EYE16	M16	0.8t	0.2t	35	23	14	31	27	0.28
EYE20	M20	1.6t	0.4t	42	30	16	35	38	0.46
EYE24	M24	2.5t	0.62t	57	38	22	48	42	1.10
EYE30	M30	4t	1t	71	49	27	65	52	2.10
EYE36	M36	6.3t	1.57t	87	53	35	73	64	3.70
EYE42	M42	8t	2t	102	66	40	90	76	6.30
Imperial									
Product Code	AØ	WLL F1	WLL F2	BØ	CØ	DØ	E	F	NET WEIGHT (KG)
EYEI24	3/8"	0.25t	0.06t	21	14	9	19	17	0.06
EYEI32	1/2"	0.4t	0.1t	28	18	11	24	21	0.15
EYEI40	5/8"	0.8t	0.2t	35	23	14	31	27	0.28
EYEI48	3/4"	1.6t	0.4t	42	30	16	35	38	0.46
EYEI56	7/8"	2t	0.5t	50	32	20	41	41	0.85
EYEI64	1"	2.5t	0.62t	57	38	22	48	42	1.10

More sizes available on request.



- Forged from high tensile alloy steel
- Tempered
- Electromagnetic crack detection to AS1171
- Hi-visibility powder coating to AS4506
- Manufactured exclusively from Australian Made Steel



WLL (WORKING LOAD LIMIT)

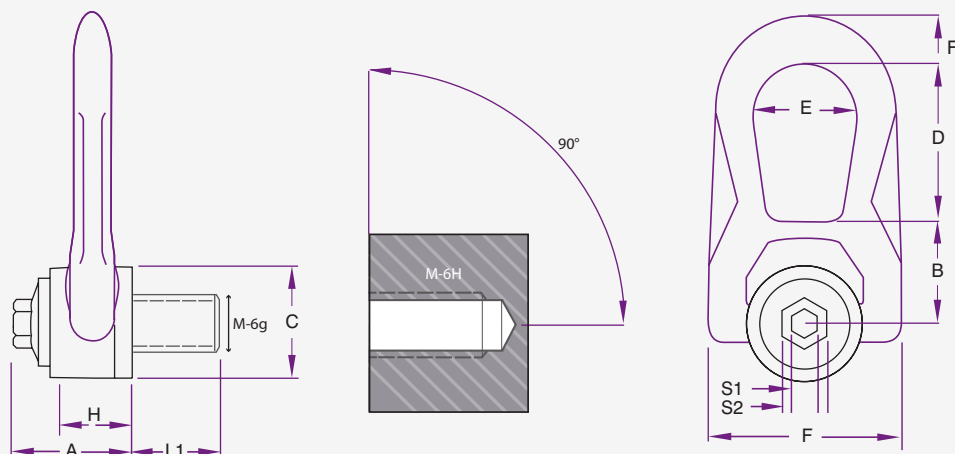
- Each eyebolt is clearly stamped with the permitted F2 WLL.
- F2 WLL - indicates safe use for non-axial lifts.
- F1 WLL - indicates loads which are in line with the axis of the threaded end of the eyebolt. F1 WLL allows up to four (4) times higher lifting capacity whilst maintaining a 4:1 design factor of safety

Metric										
Product Code	AØ	WLL F1	WLL F2	C	D	E	K	L	TORQUE (Nm)	NET WEIGHT (KG)
EYE10-G10	M10	1t	0.4t	30	11	43	55	15	14	0.23
EYE12-G10	M12	2t	0.75t	30	11	43	55	18	22	0.23
EYE16-G10	M16	4t	1.5t	34	14	49	64	24	60	0.38
EYE20-G10	M20	6t	2.3t	39	16	56	69	30	105	0.60
EYE24-G10	M24	8t	3.2t	50	19	71	86	36	182	1.10

More sizes available on request.



- European Quality
- Higher working load limits
- Full double swivel action giving greater flexibility and functionality
- Customisation of thread types and bolt lengths available in Australia
- Easier to use in more applications
- Eliminates the issues of offset loading with other swivel lifting points

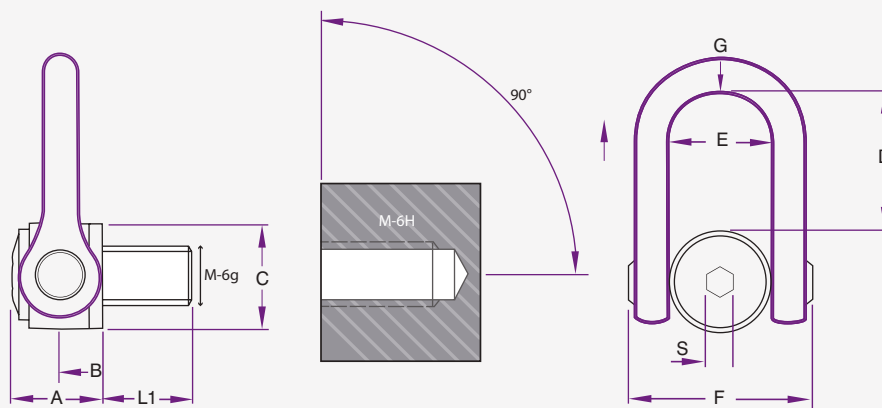


Metric																
Product Code	Dia.Ø	SF 5:1 WLL F1	SF 4:1 WLL F2	Standard L1(mm)	S1	S2	A	B	C	D	E	F	G	H	TORQUE (Nm)	NET WEIGHT (KG)
EYE08-DSR	M8 (x1.25)	0.40	0.50	15	8	16	33	30	30	38	27	14	53	9.5	6	0.3
EYE10-DSR	M10 (x1.5)	0.70	0.90	18	8	16	33	30	30	38	27	14	53	9.5	10	0.3
EYE12-DSR	M12 (x1.75)	1.05	1.30	21	8	16	33	30	30	38	27	14	53	9.5	15	0.3
EYE16-DSR	M16 (x2)	2.00	2.30	27	8	20	45	40	45	53	38	17	76	13	50	0.9
EYE20-DSR	M20 (x2.5)	2.50	2.50	30	8	20	45	40	45	53	38	17	76	13	100	0.9
EYE22-DSR	M22 (x2.5)	3.50	4.50	33	14	24	62	55	60	83	55	25	115	19	120	2.6
EYE24-DSR	M24 (x3)	4.40	5.50	36	14	24	62	55	60	83	55	25	115	19	160	2.6
EYE27-DSR	M27 (x3)	5.70	6.00	40	14	24	62	55	60	83	55	25	115	19	200	2.7
EYE30-DSR	M30 (x3.5)	6.00	6.30	45	14	24	62	55	60	83	55	25	115	19	250	2.7

More sizes available on request.

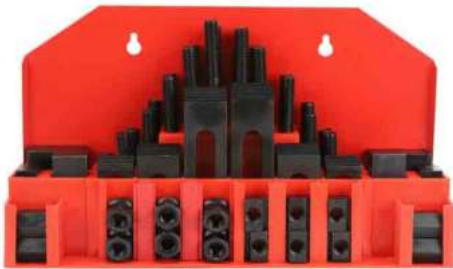


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Metric														
Product Code	Dia.Ø	SF 5:1 WLL F1	SF 4:1 WLL F2	Standard L1(mm)	S	A	B	C	D	E	F	G	TORQUE (Nm)	NET WEIGHT (KG)
EYE33-DSS	M33 (x3.5)	8.50	10.50	50	19	61	31	70	98	73	149	33	250	5.5
EYE36-DSS	M36 (x4)	11.00	12.00	54	19	61	31	70	98	73	149	33	320	5.5
EYE42-DSS	M42 (x4.5)	13.00	15.00	63	19	61	31	70	98	73	149	33	400	5.8
EYE48-DSS	M48 (x5)	17.00	20.00	68	19	79	38	90	123	91	182	45	600	11.0
EYE64-DSS	M64 (x6)	25.00	32.10	90	19	79	38	95	123	91	182	45	600	12.2

More sizes available on request.



Product Code	Description	Pack Qty
PK-104	1/2 Clamping Kit	52 pcs
PK-105	5/8 Clamping Kit	52 pcs
PKM12	12mm Clamping Kit	52 pcs
PKM16	16mm Clamping Kit	52 pcs



Product Code	Description
MIT-500-752-20	Mitutoyo 150/6" Coolant Proof Digital Caliper
MIT-500-753-20	Mitutoyo 200/8" Coolant Proof Digital Caliper
MIT-SR44	SR44 Replacement Battery

Outside Micrometer

TOOLS & ACCESSORIES



Product Code	Description
MIT-103-137	Mitutoyo 0 - 25mm Outside Micrometer
MIT-103-138	Mitutoyo 25 - 50mm Outside Micrometer

Dial Indicator

TOOLS & ACCESSORIES



Product Code	Description
MIT-513-404-10T	Mitutoyo Dial Indicator Kit



Product Code	Description
MIT-7010S-10	Magnetic Stand Plain
MIT-7011S-10	Magnetic Stand Fine Adjustment



Product Code	Description
MIT-98-321-3	Edge Finder
MIT-98-325-4	Combination Edge & Center Finder



Product Code	Description
T0150	150mm / 6" Toledo Steel Rule
T0300	300mm / 12" Toledo Steel Rule
T0600	600mm / 24" Toledo Steel Rule
T1000	1000mm / 36" Toledo Steel Rule



Product Code	Description
TAPEMEASURE-8MT	8 Metre Stanley Tape Measure

Hand Held Refractometer

TOOLS & ACCESSORIES



An industrial fluids testing device that will quickly and accurately measure the concentrate to water ratio of metal working coolants, parts cleaners, chromating solutions and many other types of aqueous based solutions and emulsions.

Product Code	Description
REFRACTOMETER	Hand Held Refractometer

Copper & Rawhide Thor Hammers

TOOLS & ACCESSORIES



Product Code	Size	Diameter	Weight	Length
TH208	A	25 mm	355 g	230 mm
TH210	1	32 mm	710 g	270 mm
TH212	2	38 mm	1070 g	305 mm
TH214	3	44 mm	1600 g	305 mm
TH216	4	50 mm	2380 g	355 mm



Product Code	Description
AIRTOOL-OIL-0250	Air Tool Oil 250ml



Product Code	Description
ZB	Bearing Blue - 25gm Tube
ZBSS	Stuarts Micrometer Blue - 32gm Tube



Product Code	Description
LS1	Layout Stain - Blue - 1 Litre



Product Code	Description
NNG1003	Will do almost all of your deburring jobs. Includes NG-1 handle, S10, S20, and S35 blades.
NNG1005	Suitable for extra fine deburring operations. Includes NG-1 handle, S10, S20, S35, S101 and S202 blades.

NOGA Deburring Tool - Liza

TOOLS & ACCESSORIES



Double end blade holder to utilise both N and S blades.
Telescopes from 20-110 mm with N Blades. Telescopes from 20-94 mm with S Blades.

Product Code	Description
NLB1000	UN1000 Handle, SN-Holder. N1 & N2 blades with extension arm.

NOGA Deburring Tool - Rapid

TOOLS & ACCESSORIES



12mm hexagonal painted handle and S10 Blade. Steel housing for long life of handle. Blade is replaceable.

Product Code	Blade Compatibility
NRB1005	3.2 mm blades

NOGA Deburring Tool - Teddy

TOOLS & ACCESSORIES



Designed for hard to reach locations. 8mm painted hexagonal aluminum handle and N1 blade. Blade is replaceable.

Product Code	Blade Compatibility
NTB1000	2.6 mm blades.



Product Code	Description
NEO1000	A handy pocket clip is a standard feature of this tool. Includes: S10 blade mounted in an 8mm painted hexagonal aluminium handle.



The standard tool for countersinking. Useful for chamfering deep holes.

Product Code	Description
NNG3100	NOGA Countersink Deburring Tool



Heavy duty, double end scraper for longer tool life. Can be locked in required position.

Product Code	Blade Compatibility
NSC1000	Double ended T120 Triangular scraper



NOGA S10 Swivel Blade. Works best on steel, aluminium and plastic

Product Code	Angle	Pack Qty
NBS1010	40 Degrees	10 pcs in a pack



NOGA Deburring Swivel Blade. Heavy duty for brass and cast iron.

Product Code	Angle	Pack Qty
NBS2010	60 Degrees	10 pcs in a pack

NOGA Blade - S101

TOOLS & ACCESSORIES



Works best on fine edges on all materials. For right hand users.

Product Code	Angle	Pack Qty
NBK1010	40 Degrees	10 pcs in a pack

NOGA Blade - S150

TOOLS & ACCESSORIES



Works best on holes as small as 1.5 mm Diameter. For right hand users

Product Code	Angle	Pack Qty
NBK3010	45 Degrees	10 pcs in a pack

NOGA Blade - N1 Swivel

TOOLS & ACCESSORIES



NOGA N1 Swivel Blade. Works best on steel, aluminium and plastic

Product Code	Angle	Pack Qty
NBN1010	40 Degrees	10 pcs in a pack

**GLOBAL STRENGTH.
LOCAL KNOWLEDGE.**



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